Supreme Court, U.S.
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No. _____

IN THE

Supreme Court Of The United States

OCTOBER TERM, 1994

LITTON SYSTEMS, INC.

Petitioner,

v.

MARTHA CARROLL, et al.,

Respondents.

Petition for a Writ Certiorari to the
United States Court of Appeals
for the Fourth Circuit

APPENDIX IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI

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UNPUBLISHED

United States Court Of Appeals
FOR THE FOURTH CIRCUIT

No. 92-2219

MARTHA CARROLL; JAMES CARROLL; ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.; KEITH S. GENTLE; BELINDA GADDIS, individually and as next friend and parent of Justin Gaddis and Derrick Gaddis, both minors; RANDY GADDIS, individually and as next friend and parent of Justin Gaddis and Derrick Gaddis, both minors; FRED ALLEN CHAMBERS, individually and as next friend and parent of Rusty Chambers, a minor; DEBBIE CHAMBERS, individually and as next friend and parent of Rusty Chambers, a minor; BARBARA MESSER; ANCY SIMONDS, individually and as next friend and parent of Jennifer Simonds, a minor; JAMES GREEN; MARVIN GARRETT; KENNY GREEN; PEGGY GREEN; SANDRA HANCOCK, individually and as next friend and parent of Chuck Hancock, a minor; JAMES R. MESSER, individually and as next friend and parent of Jonathan Messer, a minor; MELANIE MESSER, individually and as next friend and parent of Jonathan Messer, a minor; ANN CARROLL,

Plaintiffs-Appellants,

and

LUCILLE LEATHERWOOD, individually and as next friend and parent of Crystal Leatherwood, a minor; EDNA CONLEY; JOE CONLEY; TERRY CONLEY,

Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant-Appellee,

and

LITTON INDUSTRIES, INC.,
through its Agent for Service of Process:
THE CORPORATION TRUST COMPANY,
Defendant.

PRODUCT LIABILITY ADVISORY COUNCIL, INCORPORATED,
Amicus Curiae.

Appeal from the United States District Court
for the Western District of North Carolina, at Bryson City.
Richard L. Voorhees, Chief District Judge.

(CA-88-253-B-C)

Argued: June 6, 1994

Decided: February 1, 1995

Before RUSSELL and WILLIAMS, Circuit Judges,
and BUTZNER, Senior Circuit Judge.

Affirmed in part, reversed in part, and remanded by unpublished per curiam opinion. Judge Williams wrote a concurring and dissenting opinion.

COUNSEL

ARGUED: Donna Keene Holt, Knoxville, Tennessee, for Appellants. Donald W. Fowler, SPRIGGS & HOLLINGSWORTH, Washington, D.C., for Appellee. **ON BRIEF:** Sidney W. Gilreath, Knoxville, Tennessee, for Appellants. Joe G.

Hollingsworth, Bruce J. Berger, SPRIGGS & HOLLINGSWORTH, Washington, D.C.; James W. Williams, ROBERTS, STEVENS & COGBURN, Asheville, North Carolina, for Appellee. Rosewell Paige, III, E. Duncan Getchell, Jr., Melissa K. Force, MCGUIRE, WOODS, BATTLE & BOOTHE, Richmond, Virginia, for Amicus Curiae.

Unpublished opinions are not binding precedent in this circuit. See I.O.P. 36.5 and 36.6.

OPINION

PER CURIAM:

Plaintiffs, persons who obtained their drinking water from private wells allegedly contaminated by defendant Litton Systems, Inc. (Litton), appeal the district court's grant of summary judgment for Litton on all of their claims. We affirm in part and reverse in part.

I.

Litton used trichloroethane (TCE) as a degreasing solvent at its plant in Murphy, North Carolina (the plant), from 1967 until about 1974. In 1986, Litton detected the presence of TCE in the groundwater at the plant site.

Four residential wells are located near the plant. Three of these wells, the Carroll well, the Green well, and the Messer well, are located directly across a creek, called Slow Creek, which runs next to the plant; the exact location of the fourth, the Kilpatrick well, is difficult to determine from the record.[1] Upon finding TCE in the groundwater at the plant site, Litton performed repeated tests to check for the presence of TCE in these wells. Some of the tests indicated that TCE was present in the water of these wells: at the Carroll well, 72% of the test results indicated the TCE was present, with the average concentration of the TCE approximately 19.6 parts per billion (PPB); at the

[1] The parties refer to the wells by these names.

Green well, 50% of the test results indicated the TCE was present, with the average concentration of the TCE approximately 2.9 PPB; at the Messer well, 25% of the test results indicated the TCE was present, with the average concentration of the TCE approximately 2.0 PPB; at the Kilpatrick well, 38% of the test results indicated the TCE was present, with the average concentration of the TCE approximately 1.8 PPB.

Litton reacted to these tests by temporarily supplying the people who used these wells with bottled water, and then installing filter systems in the wells that strained out the TCE. Litton also entered into a consent order with the Environmental Protection Agency (EPA) in which it agreed to perform certain remedial actions.

In October, 1988, persons who had obtained their drinking water from these wells brought an action against Litton in the Western District of North Carolina.[2] All asserted claims of negligence, gross negligence, strict liability, nuisance, and trespass, as well as claims under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601-9675, and the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6992k. Magistrate Judge Toliver Davis was assigned to conduct the pre-trial stage of the action.

The record demonstrates that Magistrate Judge Davis encountered significant problems with plaintiffs' preparation of their case. The magistrate judge's original pre-trial order, filed January 12, 1989, set an April 22, 1989, discovery deadline, giving the parties 100 days to conduct discovery. Plaintiffs' counsel, however, who performed almost no investigation of plaintiffs' claims before they filed the complaint, sought and

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[2] There were initially twenty-nine plaintiffs. The claims of five were dismissed early in the litigation and these dismissals are not appealed. Two others did not appeal the district court's grant of summary judgment for Litton. The remaining twenty-two are appellants in this appeal.

were given four extensions of this discovery deadline. In all, plaintiffs were given fifteen months to prepare their case. During this discovery period, plaintiffs moved to have their action dismissed without prejudice so that they could bring it again at a later date when they were better prepared; the district court, on the magistrate judge's recommendation, denied their motion. Finally, in May, 1990, more than a year after the original discovery deadline, plaintiffs completed their discovery.

Plaintiffs' theory of the case is that in the late 1960's and early 1970's, the period when TCE was used in the plant, TCE was transported in the groundwater from the plant to the four residential wells. During the approximately fifteen years prior to the discovery of the TCE in the wells in 1986, plaintiffs consumed TCE in their drinking water and, as a result, developed a variety of health problems which were known to be caused by TCE exposure.

To prove their case, plaintiffs intended to rely on several experts. Gerald Moore, a hydrologist, indicated that, in his opinion, the TCE in the four residential wells had been transported there from the plant by groundwater. Moore acknowledged that under normal conditions, TCE would not be transported in the groundwater to the residential wells on the other side of Slow Creek because the flow of the groundwater on both sides of the creek was toward the creek. He stated that under certain conditions, however, when as a result of low rainfall or heavy well usage, the water level in the wells was below the bottom of the creek, it was theoretically possible that the wells could have drawn groundwater containing TCE from the other side of Slow Creek. Moore offered no evidence that these conditions allowing for this movement of groundwater beneath Slow Creek had ever occurred between the early 1970's and 1986. Despite this lack of evidence, however, he concluded, without support, that TCE had been drawn under Slow Creek

"within a few months to a year" after the Carroll well was dug in 1969.[3]

Moore was asked by Litton to estimate the concentrations of TCE that had been transported under Slow Creek by groundwater into the residential wells between the early 1970's and 1986. At one point, he speculated as to such concentrations, but later deferred to Dr. Hugh Spencer, another of plaintiffs' experts, to determine the concentrations over this period.

Spencer was an expert in the field of "chemodynamics," the study of the movement of chemicals in air, water, and soil. To determine the concentration of Litton's TCE in the residential wells prior to 1986, Spencer employed a concept called environmental "half-life," which posits that certain chemicals "degrade" into other chemicals over time. A chemical's half-life is the time it takes for one-half of its mass to degrade. Spencer proposed to determine the half-life of TCE, and then, assuming that the TCE found in the wells in 1986 had been degrading, to use this half-life to determine how much TCE had been in the wells during the period prior to 1986.

Spencer estimated TCE'S half-life between 1.5 and 2 years. He used this half-life figure to calculate the concentrations of TCE that must have been in the four wells from 1970 until 1986, given the small amounts of TCE found in the wells in 1986. By this calculation, he determined that in the Carroll well, the concentration of TCE in 1970 was between 1,728 and 27,591 micrograms per liter, a concentration too high for safe drinking water. This concentration had reduced by half every 1.5 to 2 years after 1970, but, under Spencer's calculations, the

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[3] Moore further noted that his tests in 1989 revealed that the chemical makeup in the groundwater on the two sides of Slow Creek was similar, which in his opinion, indicated that groundwater had traveled under Slow Creek. Because Litton concedes for the purposes of this appeal that its TCE traveled from its plant to the residential wells at some point in or prior to 1986, *see infra*, Moore's chemical analysis of the groundwater adds little to our inquiry.

plaintiffs had undergone long-term exposure to high concentrations of TCE in their drinking water between 1970 and 1986.

Next, the plaintiffs offered the testimony of three physicians, Drs. Feldman, Broughton, and Rodgers. These physicians cited studies indicating that TCE was known to cause the following health problems: nervous system disorders including numbness and tingling, memory deficits, dizziness, fatigue, weakness, depression, headaches, heart palpitations, impaired vision, headaches, skin rashes, respiratory disorders, intestinal disorders, and immune system disorders. They indicated that twenty-one of the twenty-two plaintiffs involved in this appeal had experienced some combination of these problems.[4]

In addition, Dr. Rodgers estimated each of the plaintiffs' exposures to TCE through the well water based on Spencer's calculations of the amount of Litton's TCE in the residential wells since 1970. All of the physicians opined that if Rodgers' exposure estimates were correct, plaintiffs' health problems were caused by Litton's TCE. They noted, however, that "[i]f Dr. Spencer's calculations were dismissed entirely," they "would . . . require another review of the information on each plaintiff to ascertain the length of time that the particular plaintiff was exposed to the well water."

When plaintiffs' discovery was complete, Litton moved for summary judgment on all plaintiffs' claims. Litton conceded, for the purposes of its motion, that the TCE found in the residential wells in 1986 originated in its plant, but argued that plaintiffs' evidence was insufficient to prevail on any of their claims.

Magistrate Judge Davis agreed and recommended granting Litton's summary judgment motion. First, he addressed plain-

[4] The one exception was Jonathan Messer, an eight-year-old plaintiff who has had less exposure to the water in the residential wells than any of the other plaintiffs. None of the physicians identified any health problems with Messer that were consistent with TCE exposure.

tiffs' negligence, gross negligence, and strict liability claims. For all of these claims, he reasoned, plaintiffs had to show that TCE from Litton's plant had caused them health problems. He found Moore's opinion that Litton's TCE entered the residential wells in 1970, and Spencer's calculations on the amount of Litton's TCE in plaintiffs' wells since 1970, inadmissible under Fed. R. Evid. 702. Without these, he indicated, plaintiffs could not show that Litton's TCE had harmed them. Accordingly, he advised that plaintiffs' negligence, gross negligence, and strict liability claims must fail. He also recommended that plaintiffs' nuisance, trespass, CERCLA, and RCRA claims be rejected.

The district court accepted the magistrate judge's recommendations and reasoning on all plaintiffs' claims and granted summary judgment for Litton on all of them.

II.

We first address the district court's grant of summary judgment for Litton plaintiffs' claims for negligence, gross negligence, and strict liability (the personal injury claims). To succeed on any of these claims, plaintiffs have to show that their medical problems were caused by Litton's TCE, which they ingested by drinking water from the residential wells. *Jefferson-Pilot Life Ins. Co. v. Spencer*, 442 S.E.2d 316, 319 (N.C. 1994); *Falls Sales Co. v. Board of Transp.*, 233 S.E.2d 569, 572-73 (N.C. 1977). To survive summary judgment on any of these claims, plaintiffs had to submit admissible evidence from which a reasonable jury could find, viewing this evidence in the light most favorable to them, that Litton's TCE caused their medical problems. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986).

Plaintiffs offered the following evidence to show that Litton's TCE had caused their medical problems: (1) Litton's concession that it used TCE at its plant from 1967 until about 1974; (2) Litton's concession, for the purposes of its summary

judgment motion, that the TCE found in the residential wells in 1986 originated at its plant; (3) Mr. Moore's testimony that Litton's TCE crossed Slow Creek and entered plaintiffs' wells around 1970; (4) Dr. Spencer's testimony calculating the amount of Litton's TCE in the residential wells since 1970; (5) the testimony of Drs. Feldman, Broughton, and Rodgers that TCE was known to cause the types of medical problems experienced by twenty-one of the twenty-two plaintiffs in this appeal; and (6) the opinions of Drs. Feldman, Broughton, and Rodgers that Litton's TCE caused plaintiffs' medical problems if plaintiffs were exposed to TCE in the amount and over the period estimated by Dr. Spencer.

Preliminarily, we must consider the admissibility of this evidence. The district court concluded that Moore's testimony that Litton's TCE entered the residential wells around 1970 and Spencer's testimony on the amount of TCE in plaintiffs' wells since 1970 would be inadmissible at trial under Fed. R. Evid. 702. Rule 702 states that an expert may only testify about "scientific, technical, or other specialized knowledge" that "will assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. The Supreme Court recently indicated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 113 S. Ct. 2786 (1993), that to qualify as scientific knowledge which assists the trier of fact, scientific evidence must be "reliable." *Id.* at 2795. To make the requisite reliability determination, trial courts are to take into account whether the evidence has been published and subjected to peer review, whether it has been tested and verified, whether its rate of error is high, and whether it has been generally accepted in the scientific community. *Id.* at 2796-97. *See also, United States v. Bynum*, 3 F.3d 769, 773 (4th Cir. 1993). We review a district court's decision on the admissibility of scientific evidence under Rule 702 for abuse of discretion. *Id.*

Moore indicated that Litton's TCE had crossed Slow Creek and entered into the residential wells around 1970, or "within a few months to a year" after the Carroll well was dug in 1969. Moore failed, however, to offer any support for this conclusion. In fact, he conceded that TCE could only pass under Slow Creek into the residential wells when, as a result of little rainfall or heavy well usage, the water level in the wells fell below the depth of Slow Creek, and he acknowledged that he had no evidence of such a low water level in the wells around 1970. As a result, we conclude that the district court did not abuse its discretion in concluding that Moore's expert opinion that Litton's TCE entered the residential wells around 1970 was unreliable and, therefore, ruling it inadmissible.

With regard to Spencer's testimony, plaintiffs point to absolutely no scientific support for using the concept of environmental half-life, as Spencer did, to determine how much TCE must have been present fifteen years before the discovery of TCE in the residential wells at issue in this case. In fact, the lead author of the paper on which Spencer relied heavily in calculating the half-life of the TCE in the residential wells, Dr. Paul Roberts, submitted an affidavit stating that Spencer's "approach [was] imprudent and prone to enormous error." And even Spencer concedes that the rate of error of his method could not be reduced below 1,400 percent. Moreover, Spencer's method of determining the amount of TCE in the residential wells in years past failed its only test. Spencer admits that over a two-year period after 1986 the concentration of TCE in one of the residential wells showed no change. To sustain Spencer's theory that TCE'S half-life was 1.5 to 2 years, the level of TCE should have declined by half or more; Spencer makes no effort to explain why his theory failed in this test. For all of these reasons, we conclude that the district court did not abuse its discretion in finding Spencer's expert testimony unreliable and, therefore, inadmissible under Rule 702.

The exclusion of Spencer's testimony also affects the opinions of Drs. Broughton, Feldman, and Rodgers. In forming their opinions that plaintiffs' medical problems were caused by Litton's TCE, each of these physicians relied on Dr. Rodgers' estimates of "the range of exposures to which each individual plaintiff was subjected," and Dr. Rodgers estimates, in turn, were based on Spencer's calculations using his half-life theory. These physicians noted in their joint affidavit that "[i]f Dr. Spencer's calculations were dismissed entirely," they "would . . . require another review of the information on each plaintiff to ascertain the length of time that the particular plaintiff was exposed to the well water." As Spencer's calculations were properly ruled inadmissible by the district court, plaintiffs cannot rely on these physicians' opinions that Litton's TCE caused their medial problems.[5]

Plaintiffs, therefore, are left with three pieces of evidence --that Litton used TCE at its plant from 1967 until about 1974, that the TCE found in the residential wells in 1986 originated at its plant, and that the types of health problems experienced by twenty-one of the twenty-two plaintiffs were known to be caused by TCE[6]--to show that their health problems had been caused by Litton's TCE, which they ingested by drinking water from the residential wells. We determine that for these twenty-one plaintiffs, a reasonable jury could find, on the basis of this evidence, that their health problems were caused by Litton's TCE. It could reasonably be inferred from the fact that Litton

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[5] The district court ruled inadmissible the physicians' opinions that plaintiffs' health problems were caused by Litton's TCE. We need not address the merits of this ruling because, as these opinions were based on Spencer's inadmissible calculations, plaintiffs may not rely on them.

[6] While the district court ruled inadmissible the physicians' opinions that plaintiff's health problems were caused by TCE, it properly could not find inadmissible the physicians' statements that plaintiffs experienced the health problems detailed earlier and that these types of health problems were known to be caused by TCE.

used TCE in its plant only in the late 1960's and early 1970's that the TCE discovered in the residential wells in 1986 entered these wells many years earlier, giving these plaintiffs, all of whom drank from these wells, long-term exposure to Litton's TCE. *See Anderson*, 477 U.S. at 249 (stating that the court determining summary judgment motion must examine what jury could have inferred from the evidence). And it could be further reasonably inferred from the fact that TCE was a known cause of the types of health problems experienced by these plaintiffs that this long-term exposure to Litton's TCE had caused their health problems. As a result, we conclude that the district court erred in granting summary judgment on these plaintiffs' personal injury claims.[7]

We note that our conclusion that summary judgment was inappropriate on these plaintiffs' personal injury claims is premised largely on Litton's concession, apparently made only for the purposes of this summary judgment motion, that the TCE found in the residential wells in 1986 originated at its plant. If Litton is able to retract this concession at some later point in the litigation, summary judgment on these claims may be proper.

III.

We next turn to the plaintiffs' claims of nuisance and trespass. To recover for nuisance, a plaintiff must show that the defendant unreasonably interfered with his use and enjoyment of his property and that defendant's conduct caused him "substantial injury." *Twitty v. State*, 354 S.E.2d 296, 302 (N.C. Ct. App.), *rev. denied*, 358 S.E.2d 69 (N.C. 1987). Similarly, to recover compensatory damages for trespass, a plaintiff must demonstrate that defendant made an unauthorized entry on his land and that this entry caused him "actual damage." *Matthews*

[7] The district court correctly ordered summary judgement for Litton on the personal injury claims of the one plaintiff, Jonathan Messer, who showed no health problems consistent with TCE exposure; we therefore affirm its summary judgment order as it applies to Messer.

v. Forrest, 69 S.E.2d 553, 555 (N.C. 1952). The district court granted summary judgment for Litton on plaintiffs' claims on the ground that the entry of Litton's TCE into the residential wells constituted only a *de minimis* encroachment and, therefore, did not cause a substantial injury or actual damage.

Preliminarily, as the district court recognized, a number of plaintiffs have no ownership or possessory interest in the residential wells. The nuisance and trespass claims of these plaintiffs were properly dismissed. *See State ex. rel v. Simpson*, 385 S.E.2d 329, 332 (N.C. 1989) (holding that plaintiff must have ownership or possessory interest to maintain trespass action).[8] The nuisance and trespass claims of those plaintiffs with an ownership or possessory interest in the residential wells require further analysis.

With regard to the claims of those who hold such an interest in the Carroll well, the 1986 tests revealed an average concentration of 19.6 PPB in the Carroll well, and Litton has conceded, for present purposes, that this TCE originated at its plant. The Environmental Protection Agency (EPA) has determined that the maximum concentration of TCE allowed in the public drinking water supply (also called the maximum contaminant level, or "MCL") is 5 PPB; the concentration of Litton's TCE in the Carroll well is, thus, nearly four times the maximum allowed in the public drinking supply. We believe that on this evidence alone, a reasonable jury could conclude that Litton's TCE had caused those plaintiffs who have an ownership or possessory interest in the Carroll well substantial injury or actual damage. We therefore reverse the district court's grant of summary judgment on these plaintiffs' nuisance and trespass claims.

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[8] It is not clear to us from the record which plaintiffs lack an ownership or possessory interest in the wells. On remand, the district court should determine which plaintiffs lack such an interest, and dismiss their nuisance and trespass claims.

The claims of those plaintiffs who hold ownership or possessory interests in the other three wells pose a more difficult problem, for the 1986 tests on these wells revealed average concentrations of 2.9 PPB, 2.0 PPB, and 1.8 PPB, well below the EPA's MCL for TCE. A reasonable jury could infer from the fact that Litton last used the TCE in 1974, and the fact that plaintiffs who consumed water from these wells show health problems consistent with TCE exposure, however, that the concentration of Litton's TCE in these wells was at some point before 1986 considerably higher than the concentrations measured in 1986 and, therefore, that Litton's TCE did cause substantial injury and actual damage to those plaintiffs who had an ownership or possessory interest in these wells. As a result, we reverse the district court's grant of summary judgment on these plaintiffs' nuisance and trespass claims as well.

IV.

Finally, we consider the plaintiffs' CERCLA and RCRA claims. Plaintiffs claimed under section 107 of CERCLA, 42 U.S.C. § 9607, that Litton was liable for certain of their costs, including medical costs, the costs of obtaining alternate water, and attorney's fees. To recover these costs under section 107, however, plaintiffs must demonstrate that they were "incurred . . . consistent with the national contingency plan." 42 U.S.C. § 9607(a)(4)(B); *White v. County of Newberry*, 985 F.2d 168, 174 (4th Cir. 1993). Plaintiffs did not even attempt to show that the costs they seek to recover under section 107 were incurred consistent with the national contingency plan in effect when they brought their action.

With respect to plaintiffs' RCRA claims, these claims had to be brought against a "person [including a company] . . . who is alleged *to be in violation* of any . . . requirement [of RCRA]." 42 U.S.C. § 6972(a)(1)(A) (emphasis added). The language "to be in violation" requires that the defendant be in violation of an RCRA requirement when the plaintiff's action is filed. *See*

Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc., 484 U.S. 49, 57 (1987) (interpreting identical language in the Clean Water Act in the same way). Plaintiffs made no showing that any of Litton's alleged violations of RCRA requirements were continuing at the time they filed their action.[9]

V.

For the reasons stated, we reverse the district court's grant of summary judgment on the personal injury claims of all plaintiffs except Jonathan Messer and on the nuisance and trespass claims of those plaintiffs with ownership or possessory interests in the residential wells. We affrm the district court's grant of summary judgment on the remainder of plaintiffs' claims.

AFFIRMED IN PART, REVERSED IN PART, AND REMANDED

WILLIAMS, Circuit Judge, concurring in part and dissenting in part:

As to the disposition of this case, I find myself in substantial agreement with much of the panel's well reasoned opinion. I write separately because language in parts II and III of the majority opinion implies that a lay person can infer causation when the evidence is insufficient to support a similar opinion by expert witnesses. Because I do not believe that a reasonable jury could find for plaintiffs without expert testimony, I would affirm

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[9] Plaintiffs also argue that the district court abused its discretion in denying their motion to dismiss their claims without prejudice under Fed. R Civ. P. 41(a). We reject this argument. Plaintiffs asked to have their action dismissed without prejudice largely because they had filed it without adequate preparation and wanted to file it anew after the necessary preparation was complete. This is not a proper ground for voluntary dismissal without prejudice. Moreover, Litton would have been prejudiced by such a voluntary dismissal because, at the time the motion was filed, Litton had already incurred significant expense in preparing to defend against plaintiffs' claims, and much of this expense would have been wasted if plaintiffs were allowed to dismiss their action and refile it in the future.

the district court's grant of summary judgment on the personal injury issues in part II. Furthermore, although I agree with the decision to remand as to the nuisance and trespass claims on all four wells, I do so not because I believe the plaintiffs are entitled to personal injury damages, but because I believe that, at least for summary judgment purposes, plaintiffs have created a triable issue with respect to property damages.

I begin with the proposition that the following three conclusions of the majority are correct. First, I agree that Moore and Spencer's expert testimony is inadmissible under F.R.E. 702. Therefore, I must also conclude that plaintiffs cannot rely on Drs. Feldman, Rodgers, and Broughton because the doctors relied on Moore and Spencer's inadmissible calculations to develop their expert opinions stating that the TCE caused the plaintiffs' medical problems. Finally, I agree with the panel that the district court properly admitted the doctors' expert testimony that plaintiffs' ailments were of the kind that may be caused by TCE exposure.

In my opinion, the three pieces of evidence remaining--that Litton used TCE in its plant between 1967 and 1974, Litton's stipulation that the TCE found in plaintiffs' wells in 1986 originated at Litton's plant, and that the types of health problems experienced by plaintiffs were known to be caused by TCE--are simply not sufficient to support a reasonable inference that Litton's TCE caused plaintiffs' health problems. There must be some evidence that the plaintiffs' wells contained TCE for a long enough time, and at a sufficiently high concentration, to cause their health problems.[1] "In a long line of decisions in this circuit, we have emphasized that proof of causation must be such as to suggest 'probability' rather than mere 'possibility,' precisely to guard against raw speculation by the fact-finder." *Sakaria v. Trans World Airlines*, 8 F.3d 164, 172-73 (4th Cir. 1993), *cert.*

[1] Plaintiffs' experts conceded that there would be no measurable adverse health risks if the levels of TCE exposure were sufficiently low. (J.A. 1280.)

denied, 114 S. Ct. 1835 (1994). *See also Yeater v. Allied Chem. Co.*, 755 F. Supp. 1330, 1337-38 (N.D. W.Va. 1991) (intensity of exposure and concentration of hazardous substance necessary to show probability of injury in workers' compensation suit).

Absent evidence of the length of exposure and the concentration of TCE, the similarity of plaintiffs' complaints to those caused by TCE contamination is not, I believe, sufficient to allow a reasonable inference that plaintiffs' brief exposure to Litton's TCE caused their longstanding medical problems. The admissible medical expert testimony "merely relates a hypothetical or inferential causal relation between" plaintiffs' exposure to TCE and their injuries, and thus "is not probative and cannot provide the basis for a reasonable finding of fact." *Porter v. Whitehall Lab., Inc.*, 791 F. Supp. 1335, 1345 (S.D. Ind. 1992), *aff'd*, 9 F.3d 607 (7th Cir. 1993); *see Lust v. Clark Equipment Co.*, 792 F.2d 436, 437 (4th Cir. 1986) (jury may only draw reasonably probable inferences from evidence).

Because Dr. Spencer's chemodynamic back calculations to determine the concentration of TCE in the contaminated water over the years and Moore's expert opinion that the TCE entered the wells in 1970 were inadmissible, I do not see how a jury could infer from the admitted evidence that the contamination of the wells occurred prior to 1986. Nor could a jury build on that questionable inference a conclusion that the TCE contamination was at a level of concentration sufficient to cause plaintiffs' medical problems. No admissible expert evidence indicated the length of plaintiffs' exposure or concentration of TCE before 1986. The majority's inference--from the fact that plaintiffs exhibited symptoms of a type consistent with TCE exposure--that Litton's TCE was present in wells at a higher concentration than that measured in 1986 and that Litton's TCE therefore caused substantial injury and actual damage to certain plaintiffs, is precisely the type of "raw speculation by the

fact-finder" that expert testimony concerning proof of causation is intended to guard against.

That mere exposure to TCE may potentially cause harm similar to that suffered by plaintiffs does not suffice to create a triable issue. Although "a temporal congruity may be some evidence of causation, it is insufficient evidence to move the merely possible to the reasonably probable." *Porter v. Whitehall Lab., Inc.*, 791 F. Supp. at 1342; *see also Sakaria*, 8 F.3d at 172 (temporal nexus between event and injury without medical causation testimony is insufficient to suggest probability of causation). Given the absence of reliable scientific evidence, a jury cannot be permitted to make unsupported inferences to reach a conclusion outside the realm of a lay person's knowledge. *See Sakaria*, 8 F.3d at 173 (refusing to allow causation issue to go to the jury when plaintiff's only expert testimony was inadmissible); *Wilson v. McLeod Oil Co.*, 398 S.E.2d 586, 602-03 (N.C. 1990), *reh'g denied*, 402 S.E.2d 844 (1991) (improper to allow jury to answer question that expert cannot answer). I therefore dissent from that portion of the majority opinion allowing the personal injury claims to proceed to trial.

As to the nuisance and trespass claims of plaintiffs with a possessory interest in wells, I concur in the majority's decision to remand those claims to the district court. While I do not think that plaintiffs can seek damages for personal injuries for the reasons discussed above, the record contains sufficient evidence to withstand summary judgment of plaintiffs' claims for other damages. In my opinion, plaintiffs adduced sufficient evidence to create a triable issue of fact as to the nuisance and trespass claims. Litton has stipulated for the purposes of summary judgment that the TCE in plaintiffs' wells came from its factory. Plaintiffs presented evidence showing that the sheer presence of TCE severely reduced the market value of any property upon which it was found. This evidence of devalued or unmarketable property and loss of rental value is sufficient to support the state

law nuisance and trespass claims.[2] *Maintenance Equip. Co. v. Godley Builders*, 420 S.E.2d 199, 202, 204 (N.C. App. 1992) (holding that a large depreciation in property value due to a trespass was sufficient to satisfy the damages requirement of the tort), *review denied*, 426 S.E.2d 707 (N.C. 1993); *Hanna v. Brady*, 327 S.E.2d 22, 25 (N.C. App. 1985), *review denied*, 332 S.E.2d 179 (N.C. 1985) (holding that a depreciation in property was a substantial injury supporting a nuisance suit). In sum, like the majority, I would remand the nuisance and trespass claims; however, in my opinion, any damages arising therefrom should exclude damages for personal injury.

For these reasons, I concur in part in the majority opinion and respectfully dissent in part as I have described above.

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[2] Plaintiffs submitted deposition testimony of James T. Gentry, a real estate broker/appraiser and former bank director, that the local real estate community would not consider even the least contaminated property marketable after the media released information of contamination in 1987. This was supported by plaintiffs' testimony that no one would buy their properties because of the contamination, and by evidence that the properties had substantial value prior to the discovery of contamination.

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

FILED
MARCH 6, 1995

No. 92-2219
CA-88-253-B-C

MARTHA CARROLL; JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
Justin Gaddis and Derrick Gaddis, both minors;
RANDY GADDIS, individually and as next friend and
parent of Justin Gaddis and Derrick Gaddis, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of Jennifer Simonds, a minor;
JAMES GREEN; MARVIN GARRETT; KENNY GREEN;
PEGGY GREEN; SANDRA HANCOCK, individually and
as next friend and parent of Chuck Hancock, a minor;
JAMES R. MESSER, individually and as next
friend and parent of Jonathan Messer, a minor;
MELANIE MESSER, individually and as next friend and
parent of Jonathan Messer, a minor; ANN CARROLL
Plaintiffs - Appellants,

and

LUCILLE LEATHERWOOD, individually and as
next friend and parent of Crystal Leatherwood, a minor;
EDNA CONLEY; JOE CONLEY; TERRY CONLEY
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM
Defendant - Appellee,

and

LITTON INDUSTRIES, INC.,
through its Agent for Service of Process:
THE CORPORATION TRUST COMPANY,
Defendant.

PRODUCT LIABILITY ADVISORY COUNCIL, INCORPORATED
Amicus Curiae

On Petition for Rehearing with
Suggestion for Rehearing In Banc

Filed:
March 6, 1995

The appellants' and the appellee's petitions for rehearing and suggestions for rehearing in banc and the answers to the petitions were submitted to this Court. As no member of this Court or the panel requested a poll on the suggestions for rehearing in banc, and

As the panel considered the petitions for rehearing and is of the opinion that they should be denied,

IT IS ORDERED that the petitions for rehearing and suggestions rehearing in banc are denied.

Entered at the direction of Judge Russell with the concurrence of Judge Williams and Senior Judge Butzner.

For the Court,

/s/ Bert M. Montague
CLERK

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
BRYSON CITY DIVISION

CIVIL NO. B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
JUSTIN GADDIS, and DERRICK GADDIS, both minors;
RANDY GADDIS, individually and as next friend and
parent of JUSTIN GADDIS, and DERRICK GADDIS, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of RUSTY CHAMBERS, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of RUSTY CHAMBERS, a minor;
BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of CHUCK HANCOCK, a minor;
JAMES R. MESSER, individually and as next
friend and parent of JONATHAN MESSER, a minor;
MELANIE MESSER, individually and as next friend and
parent of JONATHAN MESSER, a minor; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation,
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
JUL 15, 1991
ASHEVILLE, N.C.
U.S. DISTRICT COURT
WESTERN DISTRICT OF N.C.

ORDER

By Order of this Court dated December 7, 1987, Chief United States Magistrate Judge J. Toliver Davis was designated to conduct a hearing on pending motions in the captioned civil action and to submit to this Court recommendations for the disposition of these motions.

On October 29, 1990, the Magistrate Judge filed a Memorandum and Recommendation in this case containing proposed findings of fact and conclusions of law in support of recommendations regarding the following motions made by Defendant Litton Systems, Inc. ("Litton"): (1) Motion in Limine to Exclude Opinion Testimony Related to Plaintiffs' Past Alleged Exposure to the Chemicals in Issue; (2) Motion for Summary Judgment on Issue of Medical Causation; (3) Motion for Summary Judgment on Alleged Increased Risk of Disease; (4) Motion for Summary Judgment on Emotional Distress Claims; (5) Motion for Summary Judgment on Claims of Nuisance and Trespass; (6) Motion for Summary Judgment on Plaintiffs' CERCLA Cost Recovery Claim; (7) Motion for Summary Judgment on Plaintiffs' RCRA Claim; and (8) Motion to Deem Admitted Facts Set Forth in Requests for Admission, or Alternatively, To Determine Sufficiency of Objections. In the course of said Memorandum and Recommendation, the Magistrate Judge also presented proposed findings of fact and conclusions of law in support of a recommendation regarding the following motions made by Plaintiffs: (1) Motion to Strike From the Record Materials Submitted by the Defendant in Support of Defendant's Motions for Summary Judgment and for Sanctions Against the Defendant; (2) Motion for Partial Summary Judgment; (3) Motion to Rejoin Litton Industries, Inc. as a Party Defendant and for Sanctions; and (4) Motion of Plaintiff Sandra Hancock, Individually and as Next Friend and Parent of Chuck Hancock, a Minor, For Voluntary Dismissal. The Magistrate Judge's recommendations were filed in three parts: Recommended Find-

ings of Fact, Part I; Conclusions of Law, Part II; and Memorandum and Recommendation, Part III.

The Magistrate Judge's Recommendation advised counsel for the parties that any objections to the findings contained therein were to be filed in writing within ten (10) days after service of the Recommendation. The ten-day period was to expire on November 12, 1990. However, as permitted by the undersigned's granting of three separate motions by counsel for the Plaintiffs, Plaintiffs' objections to the Recommendation were not filed until December 5, 1990. *See* order, filed December 5, 1990 (Pleading No. 284). Plaintiffs were thereby afforded a total of thirty-seven (37) days for the filing of their objections. Plaintiffs' objections were accompanied by a request for further argument before this Court. Memorandum in Support of Plaintiff's [sic] Objections to the Findings, Conclusions and Recommendations of the Magistrate, at 134, filed December 5, 1990 (Pleading No. 285). An earlier such request has already been denied by the Magistrate Judge. *See* Order, filed October 5, 1990 (Pleading No. 273). Defendant filed a memorandum in support of the Magistrate Judge's Recommendation on December 21, 1990.

After a careful *de novo* review of the Magistrate Judge's Recommendation, Plaintiffs' objections, and Defendant's memorandum, the Court finds that the proposed findings of fact are supported by the record and that the proposed conclusions of law are consistent with current case law. The Court accepts the Magistrate Judge's findings that there are no genuine issues of material fact for trial, and that Plaintiffs have therefore failed to properly respond to the Defendant's motions for summary judgment. Fed. R. Civ. P. 56(e). The Court accepts the Magistrate Judge's recommendation that the proposed testimony of Mr. Gerald K. Moore and Dr. Hugh Spencer related to Plaintiffs' past alleged exposure to the chemicals in issue be excluded. The Court further accepts the Magistrate Judge's recommendation

that the following motions be denied: (1) Defendant's Motion to Deem Admitted Facts Set Forth in Requests for Admission, or Alternatively, To Determine Sufficiency of Objections; (2) Plaintiffs' Motion to Strike From the Record Materials Submitted by the Defendant in Support of Defendant's Motions for Summary Judgment and for Sanctions Against the Defendant; (3) Plaintiffs' Motion for Partial Summary Judgment; (4) Plaintiffs' Motion to Rejoin Litton Industries, Inc. as a Party Defendant and for Sanctions; and (5) Motion of Plaintiff Sandra Hancock, Individually and as Next Friend and Parent of Chuck Hancock, a Minor, For Voluntary Dismissal. Finally, in order to serve the ends of justice, the Court accepts the Magistrate Judge's recommendation that an inquiry, pursuant to Fed. R. Civ. P. 11, be conducted.

Furthermore, pursuant to 28 U.S.C. § 636(b)(1), the Court finds that any further argument on these matters would be unnecessary, and thus denies Plaintiffs' request for oral argument. Plaintiff is entitled to a *de novo* review of the Magistrate's Recommendation, not a *de novo* hearing. *See, e.g., United States v. Raddatz*, 447 U.S. 667, 674 (1980). Further argument cannot repair the shortcomings of Plaintiffs' case.

IT IS, THEREFORE, ORDERED that:

1. Defendant's Motion in Limine to Exclude Opinion Testimony Related to Plaintiffs' Past Alleged Exposure to the Chemicals in Issue is ALLOWED;
2. Defendant's Motion for Summary Judgment on Issue of Medical Causation is ALLOWED;
3. Defendant's Motion for Summary Judgment on Alleged Increased Risk of Disease is ALLOWED;
4. Defendant's Motion for Summary Judgment on Emotional Distress Claims is ALLOWED;
5. Defendant's Motion for Summary Judgment on Claims of Nuisance and Trespass is ALLOWED;

6. Defendant's Motion for Summary Judgment on Plaintiffs' CERCLA Cost Recovery Claim is ALLOWED;

7. Defendant's Motion for Summary Judgment on Plaintiffs' RCRA Claim is ALLOWED;

8. Plaintiffs' Motion to Strike From the Record Materials Submitted by the Defendant in Support of Defendant's Motions for Summary Judgment and for Sanctions Against the Defendant is DENIED;

9. Plaintiffs' Motion for Partial Summary Judgment is DENIED as MOOT;

10. Plaintiffs' Motion to Rejoin Litton Industries, Inc. as a Party Defendant and for Sanctions is DENIED as MOOT;

11. Defendant's Motion to Deem Admitted Facts Set Forth in Requests for Admission, or Alternatively, To Determine Sufficiency of Objections is DENIED as MOOT; and

12. Motion of Plaintiff Sandra Hancock, Individually and as Next Friend and Parent of Chuck Hancock, a Minor, For Voluntary Dismissal is DENIED.

IT IS FURTHER ORDERED that counsel for both parties appear before the Court at an inquiry, pursuant to Fed. R. Civ. P. 11, concerning the potential imposition of sanctions against counsel for the Plaintiffs. Counsel for both parties are hereby ordered to present to the Court, within twenty (20) days of receipt of this Order, briefs, memoranda, and any other information pertinent to the issue of Rule 11 sanctions.

The Court further orders that the Clerk of Court schedule the aforementioned Rule 11 inquiry, and to notify counsel for both parties of the date for said hearing.

A Judgment reflecting these findings will be filed contemporaneously herewith.

THIS the 15th day of July, 1991.

/s/ Richard L. Voorhees
RICHARD L. VOORHEES,
CHIEF JUDGE
UNITED STATES
DISTRICT COURT

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
BRYSON CITY DIVISION

CIVIL NO. B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
JUSTIN GADDIS, and DERRICK GADDIS, both minors;
RANDY GADDIS, individually and as next friend and
parent of JUSTIN GADDIS, and DERRICK GADDIS, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of RUSTY CHAMBERS, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of RUSTY CHAMBERS, a minor;
BARBARA MESSER; ANCY SIMONDS, individually and
as next friend and parent of CHUCK HANCOCK, a minor;
JAMES R. MESSER, individually and as next
friend and parent of JONATHAN MESSER, a minor;
MELANIE MESSER, individually and as next friend and
parent of JONATHAN MESSER, a minor; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation,
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
JUL 15 1991
ASHEVILLE, N.C.
U.S. DISTRICT COURT
WESTERN DISTRICT OF N.C.

JUDGMENT

For the reasons stated in the Order filed contemporaneously herewith,

IT IS ORDERED, ADJUDGED AND DECREED that the Defendant's motions for summary judgment are hereby ALLOWED and this case is hereby DISMISSED on the merits.

The Court retains jurisdiction over the pending inquiry, pursuant to Fed. R. Civ. P. 11, concerning the potential imposition of sanctions against counsel for the Plaintiffs.

THIS the 15th day of July, 1991.

/s/ Richard L. Voorhees
RICHARD L. VOORHEES,
CHIEF JUDGE
UNITED STATES
DISTRICT COURT

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
BRYSON CITY DIVISION

CIVIL NO. B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
JUSTIN GADDIS, and DERRICK GADDIS, both minors;
RANDY GADDIS, individually and as next friend and
parent of JUSTIN GADDIS, and DERRICK GADDIS, both minors;
FRED ALLEN CHAMBERS, individually and
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DEBBIE CHAMBERS, individually and
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BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of CHUCK HANCOCK, a minor;
JAMES R. MESSER, individually and as next
friend and parent of JONATHAN MESSER, a minor;
MELANIE MESSER, individually and as next friend and
parent of JONATHAN MESSER, a minor; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation,
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
ASHEVILLE, N.C.
92 AUG 20 AM 10:34
U.S. DISTRICT COURT
W. DISTRICT OF N.C.

ORDER

THIS MATTER is before the Court on Plaintiffs' motion, pursuant to Fed. R. Civ. P. 59(e), to alter or amend the Order and Judgment of July 15, 1991, dismissing Plaintiffs' claims in the captioned civil matter. The Court shall also consider herein Defendant's motion to strike the affidavits attached to Plaintiffs' Motion to Alter or Amend Judgment.[1] For the reasons stated herein, Plaintiffs' motion will be denied and Defendant's motion will be allowed.

The facts of this elephantine case are set forth in great detail in the Memorandum and Recommendation authored by Chief United States Magistrate Judge J. Toliver Davis. **Recommended Findings of Fact, Part I, filed October 29, 1990 (Pleading No. 274) ["Findings of Fact"]; Conclusions of Law, Part II, filed October 29, 1990 (Pleading No. 275) ["Conclusions of Law"]; Memorandum and Recommendation, Part III, filed October 29, 1990 (Pleading No. 276) ["Recommendation"].** As the Magistrate Judge's Recommendation, including its findings of fact and conclusions of law, has already been accepted by Order of this Court, *see* **Order, filed July 15, 1991 (Pleading No. 293) ["July 15 ORDER"]; Judgement, filed July 15, 1991 (Pleading No. 294)**, there shall be no restatement of the facts herein.

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[1] Defendant's motion also seeks the imposition of sanctions for Plaintiffs' filing of the Rule 59(e) motion. **Defendant Litton Systems, Inc.'s Motion to Strike Affidavits and For Sanctions, filed August 12, 1991 (Pleading No. 306).** The Court shall join Defendant's motion for sanctions with the other pending motions for Rule 11 sanctions, *see, e.g.*, **Defendant Litton Systems, Inc.'s Motion to Implement Magistrate's Recommendation Concerning Inquiry for Determination of Sanctions, filed June 12, 1991 (Pleading No. 291)**, and defer ruling on all motions for sanctions until after a hearing can be conducted on the issue of sanctions.

I. PLAINTIFFS' RULE 59(e) MOTION

A. Applicable Legal Standards Under Rule 59(e)

The decision whether to reopen a case under Rule 59(e) is committed to the sound discretion of the trial court. *See, e.g., Lavespere v. Niagara Mach. & Tool Works, Inc.*, 910 F.2d 167, 174 (5th Cir. 1990); *Boryan v. United States*, 884 F.2d 767, 771 (4th Cir. 1989); *Appeal of Sun Pipe Line Co.*, 831 F.2d 22, 25 (1st Cir. 1987) ("[O]nce the ball has ended, the district court has substantial discretion in deciding whether to strike up the band again in order to allow the losing party to argue new material or a new theory."), *cert. denied sub nom. Sun Pipe Line Co. v. E.P.A.*, 486 U.S. 1055 (1988); *American Home Assurance Co. v. Glenn Estess & Assocs., Inc.*, 763 F.2d 1237, 1238-39 (11th Cir. 1985).

The purpose of a Rule 59(e) motion is " 'to correct manifest errors of law or fact or to present newly discovered evidence.'"[2] *Waltman v. International Paper Co.*, 875 F.2d 468, 473 (5th Cir. 1989) (quoting *Keene Corp. v. International Fidelity Co.*, 561 F. Supp. 656, 665 (N.D. Ill. 1982), *aff'd*, 735 F.2d 1367 (7th Cir. 1984)). *See also Federal Deposit Ins. Corp. v. Meyer*, 781 F.2d 1260, 1268 (7th Cir. 1986); *Clifford v. Jacobs*, 739 F. Supp. 957, 958 (M.D. Pa. 1990); *Kalman v. Berlyn Corp.*, 706 F. Supp. 970, 974 (D. Mass. 1989), *aff'd in part, rev'd in part on other grounds*, 914 F.2d 1473 (Fed. Cir. 1990); *United States v. Carolina Eastern Chem. Co.*, 639 F. Supp. 1420, 1423 (D.S.C. 1986); *Milwee v. Peachtree Cypress Inv. Co.*, 510 F. Supp. 284, 289-90 (E.D. Tenn. 1978), *aff'd*, 644 F.2d 885 (6th Cir. 1981). In order to succeed on a Rule 59(e) motion, the

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[2] Although not applicable in the instant case, a Rule 59(e) motion may also be made due to an intervening change in the controlling law. *See, e.g., Weyerhaeuser Corp. v. Koppers Co.*, 771 F. Supp. 1406, 1419 (D. Md. 1991); *Atkins v. Marathon LeTourneau Co.*, 130 F.R.D. 625, 626 (S.D. Miss. 1990); *Natural Resources Defense Council, Inc. v. E.P.A.*, 705 F. Supp. 698, 702 (D.D.C. 1989), *vacated on other grounds*, 707 F. Supp. 3 (D.D.C. 1989).

movant has the heavy burden of demonstrating "some substantial reason that the court is in error." ***Kalman*, 706 F. Supp. at 974. *See also Wallace v. Brown*, 485 F. Supp. 77, 79 (S.D.N.Y. 1979); *Hager v. Paul Revere Life Ins. Co.*, 489 F. Supp. 317 (E.D. Tenn. 1977), *aff'd without opinion*, 615 F.2d 1360 (6th Cir. 1980); *In re Ionosphere Clubs, Inc.*, 103 B.R. 501, 503 (Bankr. S.D.N.Y. 1989); *In re Watson*, 102 B.R. 112, 113 (Bankr. S.D. Ohio 1989).**

Rule 59(e) does not permit the resurrection of facts and legal theories already considered and rejected by the trial court, or authorize the proffer of new theories previously overlooked or ignored by the movant, or allow "an unhappy litigant one additional chance to sway the judge."[3] ***Durkin v. Taylor*, 444 F. Supp. 879, 889-90 (E.D. Va. 1977). *See also Forsythe v. Saudi Arabian Airlines Corp.*, 885 F.2d 285, 289 (5th Cir. 1989); *Estate of Pidcock v. Sunnyland America, Inc.*, 726 F. Supp. 1322, 1334 (S.D. Ga. 1989); *Kalman*, 706 F. Supp. at 974; *Davis v. Lukhard*, 106 F.R.D. 317, 318 (E.D. Va. 1984), *vacated as moot*, 788 F.2d 973 (4th Cir.), *cert. denied*, 479 U.S. 868 (1986).** "Rule 59(e) is aimed at reconsideration not initial consideration. Generally, parties cannot use a rule 59(e) motion to raise arguments which could, and should, have been made before the judgment issued." ***Building & Constr. Trades Dep't v. Rockwell Int'l Corp.*, 758 F. Supp. 1428, 1429 (D. Colo. 1991) (citations omitted) (emphasis in original). *See also White v. New Hampshire Dep't of Employment Sec.*, 455 U.S. 445, 451 (1982); *Lussier v. Dugger*, 904 F.2d 661, 667 (11th Cir. 1990); *Harley-Davidson Motor Co. v. Bank of New England-Old Colony N.A.*, 897 F.2d 611, 616 (1st Cir. 1990); *Weyerhaeuser Corp.*, 771 F. Supp. at 1419; *Johnson v. Richmond*, 102 F.R.D. 623 (E.D. Va. 1984).** A motion seeking

[3] "A motion for reconsideration is not a license for a losing party's attorney to get a 'second bite at the apple' by using a word processor to move around the paragraphs from a previously submitted brief, and file a retread of the old brief disguised as a motion for reconsideration." ***Shields v. Shetler*, 120 F.R.D. 123, 126 (D. Colo. 1988).**

complete alteration of a judgment so as to effectively reverse the trial court's original findings, on a theory that the judgment is predicated on an erroneous view of the law, is more properly addressed by appeal rather than reargument. ***See, e.g., Frito-Lay of Puerto Rico, Inc. v. Canas*, 92 F.R.D. 384, 390 (D.P.R. 1981); *Durkin*, 444 F. Supp. at 889; *Blair v. Delta Air Lines, Inc.*, 344 F. Supp. 367, 368 (S.D. Fla. 1972), *aff'd*, 477 F.2d 564 (6th Cir. 1973); *Erickson Tool Co. v. Balas Collet Co.*, 277 F. Supp. 226, 234 (N.D. Ohio 1967), *aff'd*, 404 F.2d 35 (6th Cir. 1968).**

B. Plaintiffs' Rule 59(e) Arguments

Plaintiffs have set forth four arguments in support of their motion to alter or amend the Order and Judgment entered in the instant case:

1. The medical causation opinions set forth by Plaintiffs' medical experts remain valid because they were not predicated on the back calculations of trichloroethylene ("TCE") well concentrations by Dr. Hugh Spencer, which the Court excluded based upon the Magistrate Judge's Recommendation;

2. The opinion of Plaintiffs' hydrogeological expert Gerald Moore as to the course and speed of the migration of TCE, thereby placing TCE in the C-1 well between 1969 and 1971, coincides and is supported by the medical evidence and records in the case;

3. The Magistrate Judge's findings and Recommendation as to Dr. Spencer's proposed testimony and the basis of Dr. Spencer's opinion demonstrate a misunderstanding of the record; and

4. The Order and Judgment ignores Plaintiffs' claims for property damage as a result of the alleged TCE contamination.

According to Plaintiffs, these inherent errors "sufficiently demonstrate that the dismissal of all claims for all plaintiffs is in error and the Order of July 15, 1991, should be altered and amended accordingly." **Plaintiffs' Motion to Alter or Amend Judgment at 2, filed July 25, 1991 (Pleading No. 295) ["Motion to Alter or Amend Judgment"].**[4]

1. ***Validity of Expert Medical Causation Opinions***

Plaintiffs first claim that the causation opinions of their medical experts were not predicated on Dr. Spencer's back calculations of TCE concentrations, and therefore remain valid despite the Court's exclusion of those calculations. This argument has already been considered and rejected by this Court. *See* **Plaintiff's [sic] Exceptions and Objections to the Findings of Fact, Conclusions of Law, and Recommendations of the Magistrate and Request for De Novo Hearing With Additional Evidence Submitted ["Plaintiffs' Objections"] at 85, filed December 5, 1990 (Pleading No. 285) ("Defendants contend that with or without Dr. Spencer's back calculations the plaintiffs have not been exposed to enough TCE to cause any adverse health effects, no matter how long they lived there or how much of the water they drank or otherwise utilized. Plaintiffs' experts express the contrary opinion."); July 15 Order at 3 (conducting a *de novo* review of Plaintiffs' objections to the Magistrate Judge's Recommendation).** This argument was also considered by the Magistrate Judge when he examined the validity of Plaintiffs' personal injury claims "even if . . . Dr. Spencer's evidence [was] admitted."

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[4] In ruling on Plaintiffs' Motion to Amend or Alter Judgment, the Court has also considered the subsequently-filed "Plaintiffs' Opposition to Defendant's Motion to Strike Affidavits and For Sanctions with Respect to Plaintiffs' Rule 59(e) Motion," filed August 26, 1991 (Pleading No. 308). However, that pleading offers no additional reason or proof, other than the four arguments present in Plaintiffs' Rule 59(e) motion, suggesting that the Court's July 15 Order and Judgment are somehow erroneous.

Recommendation at 31. ***See also*** **Conclusions of Law at 23, 30.** By affirming the Recommendation after a *de novo* review, the Court adopted the Magistrate Judge's alternative consideration of the evidence as well. Hence, Plaintiffs' first Rule 59(e) argument has already been considered and rejected three times. Absent proof that the initial resolution of this issue was erroneous, the Court shall refuse to revisit this theory a fourth time. Because Plaintiffs have failed to demonstrate a substantial reason that the Court erred in this regard, Rule 59(e) reconsideration is inapposite as to the TCE back calculations by Dr. Spencer and the expert medical causation opinions predicated thereon.

Furthermore, the Court questions the accuracy of Plaintiffs' assertion that their medical experts did not rely on Dr. Spencer's back calculations in formulating their causation opinions. In July, 1990, Plaintiffs' three medical experts, Dr. Alan Broughton, Dr. Robert B. Feldman, and Dr. George C. Rodgers, Jr., filed a joint affidavit in which they stated:

> 25. The estimates of exposure doses calculated by Dr. Rodgers were prepared for reference as an estimate only and were useful in analyzing estimates of the various routes of exposure, and to obtain an estimate of the range of exposures to which each individual plaintiff was subjected. *We have assumed Dr. Rodgers [sic] calculations to be a reasonably accurate estimation of the range of dosages to which these plaintiffs were exposed and defer to Dr. Rodgers' expertise in that respect. . . .*
>
> 26. Even if Dr. Rodgers [sic] calculations were adjusted by the factor of 10 suggested by defendants [sic] alternative calculation for respiratory exposure, or were otherwise adjusted downward, this would not effect [sic] the opinions expressed on causation in this case for the plaintiffs who have had long term exposures. *If Dr. Spencer's back calculations were dis-*

> *missed entirely*, this would not require a change in our opinions as to all plaintiffs for whom we have expressed a positive opinion on medical causation. *It would, however, require another review of the information on each plaintiff to ascertain the length of time that the particular plaintiff was exposed to the well water.*

Appendix II.A.5. (Joint Affidavit of Plaintiffs' Medical Expert Witnesses) at 17-18 (emphasis added) attached to Plaintiffs' Objections. The range of Plaintiffs' exposure to TCE, calculated by Dr. Rodgers and used by Plaintiffs' medical experts in formulating their opinions, were expressly predicated on the Spencer back calculations: "I performed calculations to arrive at estimates of the total exposure to TCE received by each plaintiff over the years of exposure, *based on the high and low well concentration estimates provided by Dr. Spencer*. . . . I stand by the calculations as a reasonable approximation of exposure. . . ." **Appendix II.A.6. Affidavit of Dr. George Rodgers) at 11 (emphasis added) *attached to* Plaintiffs' Objections.**[5]

Dr. Spencer's back calculations provided the foundation for the medical experts' assumption that Plaintiffs had been exposed to at least 100 ppb of TCE for an extended period of

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[5] *See also* **Plaintiffs' Objections at 85 ("Dr. Spencer's back calculations provide a useful estimate of ranges to support the assumption that the water in the plaintiffs' wells was at or above 100 ppb [parts per billion concentration of TCE] for an extended period of time. And, while Dr. Spencer's back calculations provides [sic] a useful estimate of the ranges for just how high those past concentrations were, all of plaintiffs' experts have testified that 100 ppb is generally accepted as a sufficient concentration to produce symptoms in any chronic exposure. . . .").** Absent the testimony of Gerald Moore concerning TCE migration, which was properly excluded by the Magistrate Judge, ***see infra* Part I.B.2.,** the only evidence proffered by Plaintiffs to support the "assumption" that a concentration of 100 ppb was present in Plaintiffs' water supply for an extended period of time was Dr. Spencer's back calculations.

time. Exclusion of the Spencer calculations taints the accuracy of Dr. Rodgers' total exposure calculations, which were based thereon. In turn, the accuracy of the medical experts' opinions are jeopardized by their reliance on the sullied exposure calculations by Dr. Rodgers. According to the Joint Affidavit of Plaintiffs' own expert witnesses, as quoted *supra*, the exclusion of the Spencer calculations would require yet another series of testing and review of each plaintiff and another round of discovery by Defendant. As aptly stated by Magistrate Judge Davis:

> The suggestion by plaintiffs that their experts be given yet *another* chance to reformulate opinions would require Litton to go through a third cycle [of reviewing and responding to Plaintiffs' expert nominations and conducting depositions]. . . . Plaintiffs were clearly and repeatedly instructed that final expert opinions were to be submitted and that no further extensions would be allowed. Since plaintiffs' medical causation experts cannot present evidence of causation to a reasonable degree of medical certainty at this time without Dr. Spencer's back-calculations, and such back-calculations should be excluded, the testimony of plaintiffs' medical causation experts fails as well.

Recommendation at 30-31 (emphasis in original). Contrary to Plaintiffs' first Rule 59(e) argument, the Court finds that Plaintiffs' medical experts did indeed rely on Dr. Spencer's back calculations, to the extent that the exclusion of those calculations removes the critical underpinnings of validity and accuracy for the causation opinions proffered by Plaintiffs' medical experts.

2. *Validity of Expert Opinion Pertaininq to TCE Migration*

Plaintiffs argue that the expert opinion proffered by Mr. Moore, pertaining to the course and speed of TCE migration and the presence of TCE in the C-1 well between 1969 and 1971, is

corroborated by the Plaintiffs' medical evidence and records in the instant case.

In the instant case, the Magistrate Judge performed an exhaustive examination of the medical evidence and records presented by the Plaintiffs. ***See,e.g.*, Findings of Fact at 40-79; Conclusions of Law at 23-31; Recommendation at 31-48.** After conducting the requisite *de novo* review of all relevant pleadings, the Court accepted the Magistrate Judge's findings of fact, conclusions of law, and recommendations as to all issues, including the Magistrate Judge's evaluation of Plaintiffs' medical evidence and records. ***See* July 15 Order.** Plaintiffs' medical evidence and records have been considered and rejected by the Magistrate Judge and this Court as grounds for a cause of action in the instant case, and Plaintiffs have failed to set forth a substantial reason why either the Magistrate Judge or the undersigned is in error.

Assuming the proffered medical evidence could be considered as corroborative of Mr. Moore's expert opinion, Plaintiffs have failed to either address or rectify the litany of other problems implicit in the Moore opinion that resulted in the exclusion of that opinion evidence:

> Among other things, a review of the materials submitted shows that Mr. Moore has never run any scientific tests on plaintiffs' wells; he has never observed such wells in the condition that he says would have been necessary to pull chemicals under Slow Creek; he has never taken any groundwater measurements between Slow Creek and plaintiffs' wells to determine in which direction the groundwater is flowing; and he has never reviewed any rainfall data to confirm or refute his hypotheses about flow during the periods of dry weather. In short, he has offered opinions that are completely lacking of an adequate factual basis as to

when in the past chemicals allegedly arrived from the plant to plaintiffs' wells.

Recommendation at 23-24. Notwithstanding any corroborative effect Plaintiffs' medical evidence might have, the Moore opinion is devoid of any adequate factual basis and, therefore, any indicia of reliability in relation to the instant case. Reconsideration under Rule 59(e) of the Court's July 15 Order is inappropriate as to either the expert opinion of Mr. Moore or the proffered medical evidence and records.

3. ***Magistrate Judge's "Misunderstanding" of the Record***

According to Plaintiffs, the findings of fact and Recommendation set forth by the Magistrate Judge and accepted by this Court as to Dr. Spencer's proposed testimony and the basis of his expert opinion indicate a misunderstanding of the record presented in the instant case. Despite the Court's ruling *infra* as to the disposition of the affidavits attached to Plaintiffs' Motion to Alter or Amend Judgment, the conclusory nature of Plaintiffs' third Rule 59(e) argument has required the Court to consider the dilatorily proffered affidavit of Dr. Spencer in order to comprehend the gist of Plaintiffs' argument. Plaintiffs' only contention as to this third argument is that the Magistrate Judge improperly concluded that Dr. Spencer conceded in his deposition that his calculations and testimony were speculative.

The deposition testimony in question reads as follows:

> Q [by counsel for the Defendant] Would you describe these kinds of calculations as somewhat speculative?
>
> . . . .
>
> A [by Dr. Hugh Spencer] They are based upon what's available in the world's referee [sic] literature, at least that I have reviewed in this case; not speculative in that I just looked at this and decided, oh gosh, these look like good num-

> bers. I had reasons for these numbers. I have cited all of those publications, and given that information in this deposition several times.
>
> *And your characterization of it as speculative is yours, and it's a fair thing for you to say. I don't see it as speculative. I see it as it is.* I've described what I've done; and one adjective to cover it all, to me doesn't work.

Exhibit A (page 236 of Spencer Deposition, emphasis added), Affidavit of Dr. Hugh Spencer *attached* to Motion to Alter or Amend Judgment. Upon considering the deposition testimony of Dr. Spencer, Magistrate Judge Davis found that "Dr. Spencer admitted it was fair for Litton's counsel to characterize his calculations as 'speculative.'" **Findings of Fact at 31 (citing Spencer Deposition at 2-236). *See also* Conclusions of Law at 18; Recommendation at 27-28.** Subsequent to the Court's dismissal of this action, Plaintiffs have obtained another affidavit from Dr. Spencer which states: "It was my belief previously that anyone who read the specific testimony at p. 236 of deposition I gave in this case . . . would realize that it was a misstatement to find that I had agreed that it would be fair to say my calculations and testimony were speculative." **Affidavit of Dr. Hugh Spencer at 1 *attached to* Motion to Alter or Amend Judgment.**

There are at least two reasons why Rule 59(e) reconsideration is also inappropriate as to Plaintiffs' third argument. First, this argument has already been considered and rejected by both the Magistrate Judge and the undersigned. In evaluating the proffered evidence, the Magistrate Judge described Dr. Spencer's testimony as a concession that his calculations could be fairly characterized as speculative. **Findings of Fact at 31; Conclusions of Law at 18; Recommendation at 27-28.** In their written objections to the Recommendation, Plaintiffs expressly objected to the Magistrate Judge's purported mischarac-

terization of the Spencer deposition. **Plaintiffs' Objections at 75-76.** While conducting a *de novo* review of the relevant pleadings, including Plaintiffs' objections pertaining to the Spencer deposition, the Court considered and rejected this argument. ***See* July 15 Order.** In light of Dr. Spencer's response to the question posed, as emphasized in the above-quoted passage, the Court can find no error in its acceptance of the Magistrate Judge's finding that "Dr. Spencer admitted it was fair for Litton's counsel to characterize his calculations as 'speculative.'" **Findings of Fact at 31.**

Second, even if the Court discounted the questioned characterization of Dr. Spencer's deposition testimony, Plaintiffs have failed to either address or rectify the plethora of other problems identified by the Magistrate Judge that resulted in the exclusion of Dr. Spencer's opinion evidence. ***See, e.g.*, Findings of Fact at 30-38; Conclusions of Law at 16-19; Recommendation at 26-29.** Regardless of the statement by Dr. Spencer on page 236 of his deposition, the Court reaffirms its acceptance of the Magistrate Judge's Recommendation that Dr. Spencer's proposed opinions be excluded because they are "speculative, find no support in the scientific literature, are not based upon a reliable, demonstrated methodology, are not reasonably based upon the facts, and would not be of assistance to the trier of fact." **Recommendation at 29.** Therefore, Rule 59(e) reconsideration is inappropriate as to Plaintiffs' third argument.

4. *Disregard for Property Damage Claims*

Plaintiffs' final Rule 59(e) argument claims that the July 15 Order issued by this Court ignores their claims for property damage as a result of the alleged TCE contamination. This argument is absolutely erroneous.

Although it sought recovery for alleged property damage, Plaintiffs' amended complaint predicated those claims upon

only two theories of recovery, nuisance and trespass. *See* **Amended Complaint at 11-12, filed December 23, 1988 (Pleading No. 7).** Plaintiffs never proffered another theory of recovery for alleged property damage.[6] *See, e.g.*, **Plaintiffs' Memorandum in Opposition to Defendants [sic] Motion for Summary Judgment on Plaintiffs' Claims for Nuisance and Trespass, filed August 2, 1990 (Pleading No. 258).** Magistrate Judge Davis gave extensive consideration to Plaintiffs' claims of nuisance and trespass, and recommended that the Court grant Defendant's motion for summary judgment on those issues. *See* **Findings of Fact at 79-81; Conclusions of Law at 44-50; Recommendation at 54-57, 68.** Plaintiffs reiterated their property damage claims under theories of nuisance and trespass in their written objections to the Recommendation: "Whether a physician has expressed to a reasonable degree of medical certainty that a specific complaint of any specific plaintiff was most probably caused by that plaintiff's exposure to TCE has absolutely no bearing on whether there has been an injury to a property interest under nuisance and/or trespass." **Plaintiffs' Objections at 97.** In considering this objection, the Court's July 15 Order made the following statements:

> After a careful *de novo* of the Magistrate Judge's Recommendation, Plaintiffs' objections, and Defendant's memorandum, the Court finds that the proposed findings of fact are supported by the record and that the proposed conclusions of law are consistent with current case law. The Court accepts the Magis-

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[6] Subsequent to the filing of their amended complaint, Plaintiffs did file two motions for leave to file additional amended complaints. *See* **Plaintiffs' Motion for Leave to Amend Complaint, filed March 28, 1989 (Pleading No. 40); Plaintiffs' Motion for Leave to Amend Complaint, filed April 18, 1989 (Pleading No. 49).** The first motion, which was denied by Magistrate Judge Davis, *see* **Order, filed April 11, 1989 (Pleading No. 45),** sought only to add additional parties to the case. Plaintiffs withdrew the second motion to amend. *See* **Order, filed June 7, 1989 (Pleading No. 72).**

trate Judge's findings that there are no genuine issues of material fact for trial, and that Plaintiffs have therefore failed to properly respond to the Defendant's motions for summary judgment.

. . . .

IT IS, THEREFORE, ORDERED that:

. . . .

5. Defendant's Motion for Summary Judgment on Claims of Nuisance and Trespass is **ALLOWED** . . . .

July 15 Order at 3-5. ***See also*** **Judgment, filed July 15, 1991 (Pleading No. 294).**

Contrary to their fourth argument, Plaintiffs' claims for property damage as a result of the alleged TCE contamination were considered and rejected by the Magistrate Judge and by the Court's July 15 Order. This fourth argument is insufficient to warrant Rule 59(e) reconsideration. As aptly stated by Magistrate Judge Davis, "[a]ll litigation must come to an end." **Recommendation at 30.** The time has come for *Carroll et al. v. Litton Systems, Inc.* to end.

II. DEFENDANT'S MOTION TO STRIKE AFFIDAVITS

In support of their Motion to Alter or Amend Judgment, Plaintiffs proffer new affidavits from three of their proposed expert witnesses, Dr. Alan Broughton, Dr. George Rodgers, and Dr. Hugh Spencer. Prior to the submission of these affidavits, the Magistrate Judge and the Court had considered a wealth of evidence from these three witnesses, including depositions, affidavits, reports, and records. Both the Magistrate Judge and the Court have rejected the evidence from these witnesses as insufficient to create genuine issues of material fact for trial. The Court's review of the newly submitted affidavits reveals

that they are yet another futile attempt, by way of placing new interpretations on previously presented evidence, to disavow the deficiencies in these witnesses' testimony and evidence identified by the Magistrate Judge and accepted by this Court.

As set forth *supra* Part I.A., Rule 59(e) does not permit the resurrection of rejected facts and legal theories or the proffer of new theories previously ignored by counsel. Moreover,

> [i]n any case in which a party seeks to upset a summary judgment on the basis of evidence she failed to introduce on time, two important judicial imperatives clash: the need to bring litigation to an end and the need to render just decisions on the basis of all the facts. The task of the district court in such a case is to strike the proper balance between these competing interests. In order to do this, the court should consider, among other things, the reasons for the moving party's default, the importance of the omitted evidence to the moving party's case, whether the evidence was available to the nonmovant before she responded to the summary judgment motion, and the likelihood that the nonmoving party will suffer unfair prejudice if the case is reopened.

***Lavespere*, 910 F.2d at 174 (footnote omitted).**

The factors set forth by the *Lavespere* court weigh heavily against the Court's acceptance of Plaintiffs' new affidavits as evidentiary materials sufficient to warrant alteration or amendment of the Court's Judgment under Rule 59(e). Plaintiffs have offered no explanation why these affidavits, and the Rule 59(e) arguments they supposedly clarify and support, were previously unavailable or not presented to either the Magistrate Judge or this Court. ***See*, e.g., *White*, 455 U.S. at 451; *Building Constr. Trades Dep't*, 758 F. Supp. at 1429.** The 134-page memorandum in support of Plaintiffs' objections to the Magistrate Judge's Recommendation and the 2-volume Appendix attached

thereunto could have easily contained these new, albeit redundant, pleadings. As demonstrated in the Court's consideration of Plaintiffs' Rule 59(e) motion *supra*, these affidavits add nothing to the Plaintiffs' case and are, in fact, irrelevant and unpersuasive. As to the previous availability of these affidavits, Plaintiffs are attempting to ambush the Defendant with new interpretations and theories based on expert opinions available to the Plaintiffs since at least late 1989. *See* **Findings of Fact at 7-8 (Plaintiffs nominated Dr. Broughton as an expert witness on May 15, 1989), 16 (Plaintiffs nominated Drs. Rodgers and Spencer on November 30, 1989).** Finally, if the case were reopened, Defendant would suffer unfair prejudice, in that it would be forced to defend against a meritless case by initiating a third round of discovery and trial preparation necessitated only by the incessant case mismanagement of counsel for the Plaintiffs.

Defendant has, quite appropriately and correctly, identified at least two other reasons why these new affidavits should be struck: (1) they are irrelevant, in that they do not address the many alternative, valid grounds for exclusion and dismissal set forth in the Recommendation; and (2) they are in direct violation of the Magistrate Judge' December 26, 1989, Order, in which a final deadline of January 30, 1990, was established for the Plaintiffs to produce the expert opinions and the bases of those opinions upon which the instant case was to be predicated. *See* **Defendant Litton System Inc.'s Motion to Strike Affidavits and For Sanctions at 8, filed August 12, 1991 (Pleading No. 306).**

The Court finds that Plaintiffs are not entitled to submit the new affidavits of Drs. Broughton, Rodgers, and Spencer in suppot of their Rule 59(e) motion. The Court further finds that, even if they could properly be considered in support of Plaintiffs' notion, the affidavits would not warrant an amendment or alteraton of the Court's July 15 Order or Judgment under Rule

59(e). Therefore, the Court shall allow Defendant's motion to strike the affidavits attached to Plaintiffs' Motion to Alter or Amend Judgment.

III. ORDER

IT IS, THEREFORE, ORDERED that Plaintiffs' Motion, pursuant to Fed. R. Civ. P. 59(e), to Alter or Amend the Order and Judgment of July 15, 1991, dismissing Plaintiffs' claims in the captioned civil matter, is hereby **DENIED**.

IT IS FURTHER ORDERED that Defendant's Motion to Strike the Affidavits attached to Plaintiffs' Motion to Alter or Amend Judgment is hereby **ALLOWED**.

THIS the 20th day of August, 1992.

/s/ Richard L. Voorhees
RICHARD L. VOORHEES,
CHIEF JUDGE
UNITED STATES DISTRICT COURT

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT
OF NORTH CAROLINA
BRYSON CITY DIVISION
B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
Justin Gaddis, and Derrick Gaddis, both minors;
RANDY GADDIS, individually and as next friend and
parent of Justin Gaddis, and Derrick Gaddis, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of Chuck Hancock, a minor;
JAMES R. MESSER, individually and as next
friend and parent of Jonathan Messer, a minor;
MELANIE MESSER, individually and as next friend and
parent of Jonathan Messer; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
OCT 29, 1990
ASHEVILLE, N.C.
U.S. DISTRICT COURT
W. DISTRICT OF N.C.

RECOMMENDED FINDINGS OF FACT, PART I

PURSUANT TO 28, UNITED STATES CODE, SECTION 636(b) and the standing Orders of Designation entered by United States District Judge Richard L. Voorhees, the undersigned magistrate has before him the following motions: Litton Systems, Inc.'s ("Litton's") Motion in Limine to Exclude Opinion Testimony Related to Plaintiffs' Past Alleged Exposure to the Chemicals in Issue ("Motion to Exclude"), Litton's Motion for Summary Judgment on Issue of Medical Causation ("Motion on Causation"), Litton's Motion for Summary Judgment on Alleged Increased Risk of Disease ("Motion on Risk"), Litton's Motion for Summary Judgment on Emotional Distress Claims ("Motion on Distress"), Litton's Motion for Summary Judgment on Claims of Nuisance and Trespass ("Motion on Nuisance"), Litton's Motion for Summary Judgment on Plaintiffs' CERCLA Cost Recovery Claim (Count VI) ("Motion on CERCLA"), and Litton's Motion for Summary Judgment on Plaintiffs' RCRA Claim (Count VII) ("Motion on RCRA"). In addition, the undersigned Magistrate has before him the following motions that have been filed by plaintiffs: Motion to Strike From the Record Materials Submitted by the Defendant in Support of Defendants' Motions for Summary Judgment and for Sanctions Against the Defendant and the Motion of Plaintiff Sandra Hancock, Individually, and as Next Friend and Parent of Chuck Hancock, a Minor, For Voluntary Dismissal.

Having carefully considered the motions listed above, reviewed the pleadings, and conducted a hearing, the undersigned magistrate respectfully submits the following recommended findings of fact. These recommended Findings of Fact, Part I, are released in conjunction with, and as part of, the undersigned's Conclusions of Law, Part II, and Memorandum and Recommendation, Part III.

I. FINDINGS OF FACT

A. Procedural Background of the Motions

1. The complaint in this case, filed on October 25, 1988, alleged that 29 plaintiffs had been exposed to various chemicals emanating from Litton's Clifton Precision plant ("the plant") in Murphy, North Carolina. The chemicals to which plaintiffs alleged exposure were trichloroethylene ("TCE") and certain other chlorinated organic compounds. Complaint, para. 12.

2. The complaint alleged that the exposure to chemicals occurred as a result of such chemicals entering plaintiffs' homes, the homes of plaintiffs' relatives, or plaintiffs' workplaces, through groundwater that was pumped into such homes and workplaces from wells on properties surrounding the plant.

3. Plaintiffs alleged that they had been physically injured as a result of exposure to such chemicals. Among other things, plaintiffs alleged that they had "sustained permanent and debilitating illnesses and injuries, including but not limited to, nervous system damage, gastrointestinal disorders, liver disease, skin disorders, and immune system damage." Complaint, para. 16.

4. Plaintiffs further alleged that they suffer from increased risk of incurring disease in the future as a result of their exposure to the chemicals at issue.

5. Plaintiffs further alleged that they suffer from emotional distress as a result of their exposure to the chemicals at issue.

6. Plaintiffs further alleged that their real property had been devalued as a result of the presence of chemicals from the plant.

7. Plaintiffs further alleged that, as a result of their exposure, they would need long-term medical monitoring "to detect the onset of any symptoms of diseases caused by the chemicals."

8. The complaint set forth five causes of action or theories of recovery for the alleged damages described above: negligence, including negligence per se, in the alleged violation of various federal and state laws (Count I), gross negligence (Count II), strict liability for ultrahazardous activities (Count III), nuisance (Count IV), and trespass (Count V). In addition, the complaint set forth two regulatory causes of action. Under Count VI, plaintiffs sought to recover alleged "response costs" as defined by the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42, United States Code, Section 9607(a), including costs for testing of groundwater and soil, costs for alternative water supplies, costs for medical testing and surveillance, and attorneys' fees. Under Count VII, plaintiffs sought to pursue a citizens' suit under the Resource Conservation and Recovery Act ("RCRA"), 42, United States Code, Section 6971, alleging, *inter alia*, that Litton's plant was in violation of RCRA.

9. On January 12, 1989, the Court entered a pretrial order giving the parties 100 days to conduct discovery.

10. On February 6, 1989, plaintiffs filed a motion seeking an indefinite extension of the time allowed in the discovery order.

11. Although the complaint had been filed on October 25, 1988, plaintiffs failed to initiate any of their own discovery until near the end of the initial discovery period specified in the January 12, 1989, Order.

12. On March 28, 1989, the undersigned conducted the first of many pretrial hearings in this matter. In response to comments by plaintiffs' counsel to the effect that counsel had been busy working on other cases, the undersigned advised counsel "[T]his Court expects you to have the necessary equipment, horses, or whatever to carry the load, that is to do the work that is required." Transcript of March 28, 1989, Hearing at 2. At the March 28, 1989, hearing, the undersigned also advised

plaintiffs' counsel that an indefinite extension of the discovery period would not be granted, but did agree to allow an extension of discovery as described below. As of the time of the hearing, plaintiffs had not begun any discovery.

13. Plaintiffs' counsel, Gary A. Davis, suggested at the March 28, 1989, hearing that the case be pursued in a "phased" manner. In response, the undersigned and counsel for both parties agreed that discovery on issues of medical causation and liability would take place first, to be followed by the identification and deposition of expert witnesses who would provide testimony on those aspects of the case and, finally, the filing of dispositive motions on such issues. In accordance with counsel's suggestion, the undersigned entered an Order on April 10, 1989 incorporating this phased approach leading to dispositive motions on medical causation and liability.

14. Specific dates for the various steps outlined above were discussed at the March 28, 1989, hearing and agreed to by plaintiffs' counsel and Litton's counsel. The agreed-to dates were incorporated in the April 10, 1989, Order as follows: plaintiffs' were allowed until May 15, 1989, to identify their expert witnesses and the substance of the facts and opinions to which such experts were expected to testify, with their depositions to be completed by June 15, 1989; Litton's experts in turn were to be identified by June 30, 1989, and deposed by July 31, 1989; dispositive motions were required to be filed not later than July 31, 1989.

15. In addition to setting forth the schedule for pretrial proceedings in a "phased" approach as suggested by plaintiffs' counsel, the April 10, 1989, Order granted the following two motions to compel discovery filed by Litton: Litton's Motion to Compel Production of Documents and Litton's Motion to Compel Attendance of plaintiffs at their own depositions. Pursuant to Litton's motion to compel production, the undersigned

ordered plaintiffs to provide to Litton by April 15, 1989, copies of all of their medical records.

16. Notwithstanding plaintiffs' request at the March 28, 1989, hearing for a phased approach to pretrial proceedings and their agreement on the specific dates incorporated into the April 10, 1989, Order, plaintiffs filed objections to the April 10, 1989, Order on April 12, 1989. First, plaintiffs sought an extension of the April 15, 1989, deadline for producing their medical records to Litton. Second, plaintiffs sought a stay of discovery deadlines that they had agreed to at the March 28, 1989, hearing for identification of their expert witnesses and provision of such experts' anticipated opinions. In particular, plaintiffs sought a 90-day extension of these deadlines and an 80-day extension on the subsequent dates relating to filing of dispositive motions. In seeking such extensions, plaintiffs admitted that "[t]o recover damages for their illnesses, [plaintiffs] must demonstrate that there is a connection between the illnesses that plaintiffs have suffered and their exposure to the chemicals in their water." Mem. in Supp. of Plaintiffs' Objections to Orders of Magistate at 4-5.

17. On May 15, 1989, plaintiffs filed with the court a motion for a temporary stay of the discovery deadlines in the April 10, 1989, Order.

18. On May 15, 1989, plaintiffs submitted a Nomination of Expert Witnesses. Among other individuals identified, plaintiffs named Gerald K. Moore, a hydrogeologist, to testify that the plant was the likely source of chemicals in plaintiffs' wells. In addition, plaintiffs stated that Mr. Moore would testify that the chemicals "likely reached plaintiffs' wells several years before they were first analyzed for in late 1986 and at concentrations higher than those first determined in late 1986." In addition, plaintiffs named three expert witnesses on the issue of medical causation, Drs. Feldman, Broughton, and Marcus. Dr. Robert Feldman, M.D., a neurologist, was described as having

a "preliminary" opinion that unnamed plaintiffs' alleged neurological symptoms were likely to have been caused by exposure to the chemicals at issue. Dr. Allan Broughton, M.D., was described as believing that exposure to the chemicals at issue can cause "a form of autoimmune disease." Dr. William Marcus, Ph.D., was described as having a "preliminary" opinion that "certain symptoms and conditions suffered by certain plaintiffs have been likely caused by their exposure" to the chemicals at issue.

19. On May 16, 1989, plaintiffs filed with the undersigned a Motion for Reconsideration of Magistrate's Orders, in which they reiterated the request for extension of deadlines that plaintiffs had previously made directly to the Court, *i.e.*, a request for a 90-day extension on the deadline for identifying expert witnesses and a request for an extension, until June 15, 1989, of the deadline for providing copies of plaintiffs' medical records. Plaintiffs alleged, *inter alia*, "delays" in obtaining medical records from plaintiffs' medical treaters and alleged that it was "physically impossible" for them to conduct necessary steps to comply with the deadlines set forth in the April 10, 1989, Order.

20. On May 25, 1989, the undersigned held a pretrial hearing to rule, *inter alia*, on plaintiffs' motion for revision of the April 10, 1989, Order. During the hearing, the undersigned warned plaintiffs: "[I]f you've got good evidence of causation, proceed with [the case]. But if you haven't, drop it." Transcript of May 25, 1989, Hearing at 13-14.

21. From the bench on May 25, 1989, and in its corresponding Order of June 7, 1989, the undersigned ruled as follows: that the April 10, 1989, Order had correctly incorporated the agreements made by plaintiffs' counsel at the March 28, 1989, hearing and that plaintiffs' attempt to appeal the April 10, 1989, Order had caused disorder in that the appropriate remedy, if any, was to seek reconsideration from the undersigned. Nonetheless, the undersigned granted an extension to

plaintiffs until June 30, 1989, to submit copies of their medical records to Litton. In addition, the undersigned granted plaintiffs' motion to revise discovery deadlines, granting them additional time until June 1, 1989, to identify new expert witnesses and until June 30, 1989, to set forth the facts and opinions to which such experts were prepared to testify. The undersigned correspondingly extended until September 30, 1989, the date for filing of dispositive motions. In addition, the undersigned granted Litton's renewed motion to compel production of documents relating to three distinct categories of documents that plaintiffs had failed to produce: insurance records, income tax returns, and files they kept concerning the chemicals at issue.

22. On June 1, 1989, plaintiffs identified, *inter alia*, Eric Engum, Ph.D., a psychologist, as an additional expert witness to testify concerning "medical causation."

23. On June 30, 1989, plaintiffs submitted a Supplemental Nomination of Expert Witnesses. Mr. Moore, the hydrogeologist, was described as having the opinion that chemicals reached what has been described as the Carroll Well within one year after that well began pumping in 1969. The Supplemental Nomination also attached, *inter alia*, (1) reports prepared by Dr. Broughton concerning so-called T-lymphocytes and auto-antibodies allegedly found in the blood of certain plaintiffs, (2) reports prepared by Dr. Engum concerning three plaintiffs (Martha Carroll, Debbie Chambers, and Fred Allen Chambers), and (3) draft reports prepared by Dr. Feldman concerning three plaintiffs (Barbara Messer, Ancy Simonds, and James Carroll). The Supplemental Nomination noted that Dr. Feldman could not provide medical opinions to a reasonable degree of medical certainty without reviewing the results of certain "blink reflex" tests performed by Dr. Berta Bergia, another neurologist, and asserted that Dr. Feldman had not yet had time to make such review.

24. On July 12, 1989, plaintiffs filed a motion for another extension of time within which plaintiffs' experts would express

opinions on medical causation as to specific plaintiffs. In the alternative, plaintiffs sought voluntary dismissal without prejudice under Federal Rule of Civil Procedure 41(a). At the time, depositions of plaintiffs' causation experts had been scheduled for later in July 1989. As grounds for the requested relief, plaintiffs cited alleged "breakdown in document controls" in their office relating to plaintiffs' medical records. Plaintiffs alleged that their experts were "not able to express a final opinion [on medical causation] as to each plaintiff because of a lack of information as to each and every plaintiff." Memorandum in Support of Plaintiffs' Motion to Extend the Time for Plaintiffs' Medical Experts to Express Opinions on Medical Causation as to Specific Plaintiffs or in the Alternative for Dismissal Under Rule 41(a). Plaintiffs did not specify any particular plaintiff as to whom their experts on medical causation *were* able to express opinions to a reasonable degree of medical certainty, nor did plaintiffs specify the particular plaintiffs whose claims should have been dismissed voluntarily without prejudice.

25. Litton opposed plaintiffs' motion for further extensions of time or, in the alternative, for dismissal without prejudice. In documents filed subsequent to the deposition of plaintiffs' expert witnesses on medical causation, Litton contended that none of plaintiffs' named medical experts had been able to express any opinion, to a reasonable degree of medical certainty, that any of plaintiffs' alleged health complaints had been caused by plaintiffs' alleged exposure to TCE or the other chemicals in issue.

26. In their reply brief filed in support of their motion for an extension of time or, alternatively, dismissal without prejudice, plaintiffs admitted: "It is apparent that in several respects the plaintiffs' technical proofs of medical causation have not been met 'to a reasonable degree of medical certainty'. . . ."

Reply Brief at 2. Plaintiffs accordingly requested voluntary dismissal without prejudice as their preferred relief.

27. On August 22, 1989, pursuant to motion, the Court involuntarily dismissed the claims of two plaintiffs, Lucille and Crystal Leatherwood, without prejudice. These plaintiffs could not be found by plaintiffs' counsel and could not respond to any discovery request.

28. On September 6, 1989, Litton filed a motion for summary judgment concerning three plaintiffs: Joe, Edna, and Terry Conley. In support of the motion, Litton argued that there was no evidence that the Conleys had been exposed to any of the chemicals at issue in the case or that any such chemicals could have migrated from the plant to their well. Litton further argued that plaintiffs' hydrogeologist, Mr. Moore, had admitted at his deposition that there were no analytical results showing the presence of any chemicals in the Conleys' water. Plaintiffs did not oppose the entry of summary judgment on Litton's behalf with respect to the Conleys. Accordingly, on October 12, 1989, the undersigned issued a Memorandum and Recommendation that the Conleys' claims be dismissed with prejudice pursuant to Litton's motion for summary judgment. In the October 12, 1989, Memorandum and Recommendation, the undersigned noted that, *inter alia*, the following elements had to be shown by a plaintiff seeking damages or recovery as a result of alleged exposure to chemicals from groundwater:

> (1) release by defendant of complained of chemicals into the environment; (2) chemical migration into the groundwater and further migration of groundwater in the Conleys' well; (3) ingestion of these chemicals by the Conleys; (4) injury; and (5) that the ingested chemicals were the cause of the injuries.

On December 5, 1989, the district court entered a Memorandum Opinion and Order concluding that the undersigned's "proposed findings of fact are supported by the record and that the proposed

conclusions of law are consistent with current case law." Accordingly, the district court ordered, *inter alia*, that the Conleys' claims be dismissed with prejudice.

29. On September 27, 1989, the undersigned held a hearing to resolve, *inter alia*, plaintiffs' motion for an indefinite extension of time within which their experts could provide adequate testimony on medical causation or, in the alternative, dismissal without prejudice, which motion was opposed by Litton. At the hearing, plaintiffs' counsel Donna K. Holt admitted that plaintiffs had done virtually nothing to prepare their case before it was filed. Transcript of September 27, 1989, Hearing at 21. Ms. Holt advised the undersigned, however, that the reason for plaintiffs' difficulty in obtaining medical causation opinions had to do with problems in obtaining, distributing, and reviewing copies of plaintiffs' medical records. *Id.* at 2, 20. Plaintiffs' counsel specifically disavowed that plaintiffs were searching or "fishing" for new experts on medical causation. *Id.* at 8, 16. The undersigned granted plaintiffs another extension of the date by which expert opinions could be submitted, *i.e.*, until November 30, 1989. In granting their request and extending the deadline five months, the undersigned admonished plaintiffs' counsel that this extension would be the last one given to plaintiffs. *Id.* at 22.

30. In its October 12, 1989, Order, the undersigned found, as follows:

> Plaintiffs are advised that this third extension will be their final extension. Plaintiffs have admitted in court that before this matter was filed the appropriate pre-filing research had not been conducted.

October 12, 1989, Order, at 2. The undersigned further warned:

> [P]laintiffs' counsel is cautioned again that if they do not have the personnel to give this matter the attention these clients deserve, then it's time to retain additional

> assistance. Plaintiffs' case has been dropped like a foundling at the courthouse door, but this court has neither the resources nor the inclination to foster the progeny of counsel's imprudent acts.

Id. at 3.

31. As a result of the extension, the date for submission of dispositive motions was changed from September 30, 1989, to March 15, 1990. Litton had prepared dispositive motions to be filed on September 30, 1989, and as a result of the extension, it was put to additional costs.

32. At the September 27, 1989, hearing, the undersigned again advised plaintiffs' counsel to drop the claims if they were not valid. "If they're not valid claims, they ought to be dismissed." Transcript of September 27, 1989, Hearing at 9.

33. In addition, on September 27, 1989, the undersigned determined to recommend to the district court that plaintiffs' alternative motion for voluntary dismissal without prejudice be denied because Litton would have been unduly injured by such action. In its October 12, 1989, Memorandum and Recommendation, the undersigned concluded that plaintiffs had "conducted little, if any, prefiling discovery as required by Rule 11, Federal Rules of Civil Procedure," that "plaintiffs have caused defendant to go to great expense to defend itself from what is apparently a claim that has not been properly developed," and that plaintiffs had "prematurely" placed a substantial burden on the judicial process by their conduct. October 12, 1989, Memorandum and Recommendation at 5-6. Plaintiffs filed objections to the recommendation.

34. In its December 5, 1989, Memorandum of Opinion and Order, the district court, upon *de novo* review of the record, considered and rejected plaintiffs' objections to the recommendation. The court found that "the proposed findings of fact are supported by the record and that the proposed conclusions of

law are consistent with current case law." December 5, 1989, Memorandum of Opinion and Order at 2.

35. On November 30, 1989--the extended deadline for naming expert witnesses on medical causation that the undersigned had advised plaintiffs would be their last--plaintiffs filed another nomination which named two new expert witnesses, Dr. Hugh Spencer and Dr. George Rodgers. At the same time, plaintiffs filed another motion for an extension of time and renewed their motion for voluntarily dismissal without prejudice. Again, plaintiffs admitted in their papers that there was a "technical failure of proof at this time for some portion of the injuries alleged by some of the plaintiffs," Memorandum in Support of Plaintiffs' Motion for Extension of Time or in the Alternative Renewed Motion for Dismissal Under Rule 42(a) [sic], at 3. Plaintiffs did not specify particular plaintiffs or particular injuries as to which there was sufficient evidence of medical causation to withstand a dispositive motion.

36. In attempting to explain their need for additional time to develop sufficient evidence, plaintiffs conceded that they had "failed to appreciate the nature and extent of the information on exposure needed by the medical experts before they could reach final opinions on medical causation," *id.* at 6, and that "the medical experts need to know when the exposure began and ended." Plaintiffs also conceded that the fact that chemicals had been found in plaintiffs' wells in 1987 and the alleged fact that Litton had stopped discharging TCE into the ground at the plant in 1974 were "not sufficient data for a medical expert to assess and distinguish which conditions and symptoms of a particular plaintiff are most likely the result of exposure to defendant's chemicals or from some other cause." *Id.* at 6-7. Plaintiffs referred to their newly named expert, Dr. Spencer, as the alleged source of the exposure information needed by plaintiffs' medical causation experts. *See* Finding of Fact 37 below. Plaintiffs contended that Dr. Spencer needed additional time to review

additional test results and study chemicals other than TCE which had been found in plaintiffs' wells. *Id.* at 7.

37. In addition, plaintiffs contended that additional "blink reflex" tests were necessary in order for Dr. Feldman, plaintiffs' neurologist, to form "final opinions" on plaintiffs. Motion for Extension of Time or in the Alternative Renewed Motion for Dismissal Under Rule 42(a) [sic], at 2. Plaintiffs' counsel had previously advised the undersigned, at the September 27, 1989, hearing, that the initial series of blink reflex tests run by Dr. Bergia had not been done properly, according to Dr. Feldman; that Dr. Feldman did not consider the tests reliable; and that Dr. Bergia had been "confused" and "did not follow protocol." As a result of these failures, Ms. Holt advised the undersigned that Dr. Feldman could not provide "opinions to a reasonable degree of medical certainty on any individual plaintiff." Transcript of September 27, 1989, Hearing at 2.

38. As noted above, plaintiffs on November 30, 1989, submitted a revised nomination of expert witnesses naming, *inter alia*, Dr. Spencer as an expert who could testify concerning prior levels of chemicals in plaintiffs' wells. The nomination included a report from Dr. Spencer in which he estimated that the Carroll Well (otherwise referred to in this litigation as the "Old Green Well") contained as much as 27,591 parts per billion ("ppb") TCE in 1970. As described in the report, Dr. Spencer reached such conclusions by deriving an estimated "TCE half-life," *i.e.*, a period of time in which TCE in an aquifer supposedly degrades to one half of its original concentration, and then back-calculating from known or estimated concentrations. The 27,591 ppb estimate was premised upon an assumed TCE half-life of 1.5 years and an estimated (not measured) concentration in the Carroll Well of 108 ppb in 1986. Exhibit 4 to Plaintiffs' November 30, 1989, Nomination of Expert Witnesses ("Spencer Report"), at 4. Dr. Spencer also estimated prior alleged concentrations of TCE assuming a TCE half-life of 2.0

years and a lower starting concentration. In these alternative calculations, the highest TCE concentrations in the Carroll Well were given as 1,728 ppb. In each scenario painted by Dr. Spencer, he assumed that TCE concentrations declined regularly and steadily until 1987, when TCE was first measured in the Carroll Well.

39. The November 30, 1989, nomination also reiterated that the blink reflex tests previously performed on plaintiffs were "of limited usefulness because of questions surrounding the validity of the results." Plaintiffs' November 30, 1989, Nomination of Expert Witnesses, at 3.

40. In support of plaintiffs' November 30, 1989, motion for further extension of the discovery schedule and renewed motion for dismissal without prejudice, plaintiffs' counsel, Donna K. Holt, submitted an affidavit. Among other things, Ms. Holt admitted in her affidavit that, as of the July 1989 deposition of Dr. Feldman, in which he testified that he was unable at that time to provide opinions on medical causation to a reasonable degree of medical certainty, Ms. Holt was aware of plaintiffs' need to find new expert witnesses on the issue of exposure and that plaintiffs had been looking for such an expert since August 1989. Affidavit of Donna K. Holt, paras. 5, 7.

41. Litton again opposed plaintiffs' requested extension of time, arguing among other things that plaintiffs' attempted addition of two new expert witnesses was neither contemplated nor approved by the undersigned in its October 12, 1989, Order and had never been mentioned as a reason for obtaining additional time. Litton further argued that any further extensions would be prejudicial and wasteful.

42. Hearing on plaintiffs' motion for additional time or dismissal occurred on December 18, 1989. Plaintiffs' counsel, Donna Holt, conceded that she had known, at the time of the September 27, 1989, hearing, that "Dr. Moore's testimony [on prior alleged levels of chemicals in plaintiffs' wells] was not

sufficient. I figured that out during the medical depositions." Transcript of December 18, 1989, Hearing at 21. In addition, plaintiffs' counsel admitted that the blink reflex data submitted by Dr. Bergia was an inadequate basis upon which Dr. Feldman could base an opinion on medical causation. *Id.* at 26 ("they have demonstrated in their depositions of her that she did not have the qualifications that Dr. Feldman required for someone to do the tests"), 42 ("[i]t was a mechanical technician duty that was botched . . . [a]nd now Feldman cannot rely on the results").

43. Again, the undersigned warned plaintiffs' counsel at the December 18, 1989, hearing that "if [plaintiffs'] claims are not valid, they ought to be dismissed." *Id.* at 23. The undersigned also advised the parties that Litton would be entitled to file a motion pursuant to Rule 11, Federal Rules of Civil Procedure, in the event that plaintiffs' claims were dismissed. *Id.* at 34.

44. Even though Litton would be put to severe expense by allowing yet another continuance to plaintiffs--a continuance which included the naming of new expert witnesses not contemplated by the undersigned's prior order--the undersigned agreed to plaintiffs' motion for continuance and agreed to allow plaintiffs to name the new experts, including Dr. Spencer. In so doing, the undersigned acted out of concern for plaintiffs' interests, not wanting to penalize plaintiffs for the deficiencies of their counsel. Out of that concern, the undersigned determined to grant plaintiffs' counsel one more extension of time in which to attempt to put together a case that could survive summary judgment.

45. The undersigned accordingly entered an Order on December 26, 1989. Among other things, the December 26, 1989, Order recounted the procedural history of the case: how the undersigned had agreed to plaintiffs' suggestion to try this case in "phases" and had granted numerous extensions, and how plaintiffs had been unable to fulfill their promises to the under-

signed and had, indeed, demonstrated a "lack of candor in the status of nominated experts." December 26, 1989, Order at 3. The undersigned observed that plaintiffs:

> have asked for what will be the fourth enlargement of discovery, not heeded the court's instructions, not complied with the court's orders, and have been less than candid with the court.

Id. at 4. The undersigned also observed that "[t]he discovery burdens of which plaintiffs' counsel complains are of their own creation through failure to prepare properly the extensive claims presented to this court." Nonetheless, the undersigned allowed plaintiffs until January 30, 1990, to revise or supplement their experts' opinions. The date for filing dispositive motions was again moved, from March 15, 1990, to May 15, 1990.

46. In addition, the undersigned recommended to the district court that, at the conclusion of the litigation, it impose sanctions against plaintiffs' counsel in the amount of Litton's costs in deposing experts previously named by plaintiffs and later withdrawn when plaintiffs named new expert witnesses. Such experts include, but are not limited to, Dr. Berta Bergia and Dr. William Marcus.

47. Finally, the undersigned declined to rule on plaintiffs' renewed motion for dismissal without prejudice, concluding that the district court had already ruled on plaintiffs' prior motion and that the motion for renewal should be pursued directly before the district court.

48. On April 30, 1990, the district court issued a Memorandum of Opinion denying plaintiffs' renewed motion for dismissal without prejudice. The district court concluded, *inter alia*, that Litton had gone to "great effort and expense in preparing itself for trial," April 30, 1990 Memorandum of Opinion at 5; that plaintiffs had received five formal extensions of discovery over Litton's objections, *id.* at 6; that Litton justifiably feared

that a renewal of plaintiffs' complaint at a later time would require previously taken depositions to be updated at substantial expense, *id.* at 7; that such renewal would require substantial supplementation of Litton's own expert opinions at excessive expense, *id.*; that "Plaintiffs are having difficulty in finding evidence linking Defendant's conduct to Plaintiffs' ills," *id.* at 8; that "[e]xhaustive preparations have been made for trial . . . [and that] this lawsuit [has] reached an advanced stage of proceedings," *id.* at 8-9; and that:

> Based upon the record developed thus far, diligence on the part of the Plaintiffs has been lacking; delay has become a custom. Plaintiffs have asked for and received five extensions of discovery in order to uncover critical medical evidence including expert opinion. One would have expected such information to exist in accessible and identifiable form prior to filing of the complaint. Despite the fact that each request for an extension has been granted, the Plaintiffs still seek voluntarily dismissal of their claims, apparently because of counsel's inability to meet the discovery deadlines as extended.

Id. at 9. In addition, the district court found that plaintiffs had lacked diligence in bringing its evidentiary problems before the court, *id.* at 11, and concluded that, since plaintiffs' only reason for requesting dismissal without prejudice was their "stated need to locate the medical and expert testimony required to prosecute the suit," the explanation was insufficient "[i]n light of the generous discovery extensions Plaintiffs already have received." *Id.* at 11-12. The district court also concluded that no conditions could be imposed upon plaintiffs that would obviate the harm to Litton in the event that the court allowed plaintiffs voluntary dismissal without prejudice.

49. On May 11, 1990, plaintiffs filed a motion for voluntary dismissal of plaintiffs Sandra Hancock and her minor son,

Chuck Hancock. As grounds for this motion, plaintiffs admitted that "plaintiffs' medical experts have concluded that medical causation cannot be established at this time between these plaintiffs' complaints and their exposure to the contaminated water at issue in this case." Plaintiffs' Motion for Voluntary Dismissal of Plaintiffs Sandra Hancock and Chuck Hancock, A Minor, at 1-2. In addition, plaintiffs requested that the claims of Chuck Hancock be dismissed without prejudice. As the asserted basis for this motion to dismiss, plaintiffs explained that the Hancocks had been exposed only to chemicals allegedly emanating from what is known as the Kilpatrick Well, that Dr. Spencer had provided calculations concerning the alleged level of TCE to which the Hancocks had been exposed, and that Dr. Rodgers, having been given such information, was unable to testify to a reasonable degree of medical certainty that any symptoms alleged by the Hancocks had been caused by such alleged exposure. Memorandum in Support of Motion for Voluntary Dismissal of Plaintiffs Sandra Hancock and Chuck Hancock, A Minor, at 2.

50. Litton filed a memorandum in opposition to plaintiffs' motion to voluntarily dismiss the Hancocks' claims, asserting that such claims should be addressed within the context of the summary judgment motions that had been filed on May 15, 1990, and, in any event, that any dismissal of claims should be with prejudice and with imposition of sanctions under Rules 11 and 41(A)(2), Federal Rules of Civil Procedure; 28, United States Code, Section 1927, and the Court's inherent authority.

51. On May 15, 1990, Litton filed the above-listed motions for summary judgment and its motion to preclude plaintiffs' evidence of exposure, as required by the revised pretrial order. On the same date, plaintiffs filed a motion for partial summary judgment as to elements of two of their claims. As required by the pretrial order, Litton submitted its opposition to plaintiffs' motion by May 30, 1990. Plaintiffs, however, re-

quested an extension of time within which to respond to Litton's motions until July 16, 1990. The undersigned granted plaintiffs an extension *longer* than the one they had requested and allowed plaintiffs' oppositions to be filed by July 30, 1990.

52. On June 13, 1990, the undersigned conducted yet another hearing in this case. At this hearing, the undersigned determined *inter alia*, to defer consideration of the Hancocks' motion for voluntary dismissal until after consideration of the pending summary judgment motions. It likewise determined to defer consideration of two other pending motions--Plaintiffs' Motion to Rejoin Litton Industries, Inc. as Party Defendant and Litton's Motion to Deem Admitted Requests for Admission. The undersigned also asked counsel to determine what method of arguing the pending summary judgment motions made most sense.

53. In response to this request, plaintiffs' counsel advised the undersigned that Litton's Motion to Exclude should be argued first because, logically, the results of other pending motions could be affected by the undersigned's recommendations on the Motion to Exclude. Accordingly, in its Order of August 17, 1990, the undersigned designated that argument on the Motion to Exclude be heard first and set such argument for August 30, 1990. In addition, the undersigned scheduled argument on August 30, 1990, for plaintiffs' Motion to Strike and Litton's summary judgment motion on medical causation. Arguments on the other summary judgment motions were scheduled for September 17 and October 1, 1990.

54. On the morning of August 30, 1990, the parties appeared before the undersigned and argued the Motion to Exclude. The undersigned determined to cancel the afternoon's scheduled argument of the Motion on Causation, however, in deference to the asserted ill health of one of plaintiffs' counsel. At that time, the undersigned invited the parties' views on the appropriate procedural disposition of the Motion on Causation

and the Motion to Strike. After discussion, the parties agreed that these motions could and should be submitted on the papers without need for oral argument. The undersigned so ordered, noting that, as to the Motion on Causation, the record was complete and the issues fully and well briefed.

55. In accordance with such order, the undersigned will issue a recommendation as to the Motion to Exclude and the Motion on Causation and address the remaining motions simultaneously. Accordingly, in the Order of September 5, 1990, the undersigned canceled the hearings previously set for September 17 and October 1, 1990, with provision for rescheduling argument in the event that any issues remain after the Memorandum and Recommendation filed simultaneously herewith is disposed of by the district court.

B. Findings on the Motion to Exclude

56. Plaintiffs have offered two witnesses who, together, propose to establish the levels of TCE to which plaintiffs were allegedly exposed prior to 1987. They are Gerald Moore, a hydrogeologist, and Dr. Hugh Spencer, described by plaintiffs as a "biochemist."

57. With the exception of the Hancocks, plaintiffs claim that they were exposed to TCE that allegedly migrated from Litton's plant, through groundwater, to wells located generally north of the plant. A stream, Slow Creek, divides Litton's property from that of the plaintiffs. Plaintiffs' case against Litton requires a demonstration that Litton's chemicals migrated underneath this stream. Although Litton contests that its plant was the source of chemicals found in plaintiffs' wells, its pending motions do not require resolution of this dispute.

58. Mr. Moore's opinions were presented in a report that he authored entitled *Hydrogeology and Groundwater Pollution in the Peachtree Community Area, Cherokee County North Carolina* (July 17, 1989) ("Moore Report"). According to the

report and Mr. Moore's testimony, groundwater normally discharges into Slow Creek from both sides of the creek and thus normally would *not* carry chemicals under Slow Creek from the plant to plaintiffs' wells. Moore Report at 3, 5; *see also* Moore Dep. (July 17, 1989) at 149-50 (groundwater would not flow uphill from Slow Creek to plaintiffs' wells based upon conditions observed by Mr. Moore in 1989). Mr. Moore believes, though, that during dry periods, when the level of water in plaintiffs' wells was allegedly very low, the wells *would* have drawn groundwater from the Clifton site under Slow Creek. Moore Report at 1c, 5; Moore Dep. (July 17, 1989) at 151. The Moore Report does not provide any opinion to the effect that chemicals from the plant arrived at plaintiffs' wells in 1970 or at any other particular time prior to 1987.

59. Mr. Moore has not performed any tests nor made any calculations to determine when, if ever, low water conditions occurred in plaintiffs' wells. Moore Dep. (July 17, 1989) at 154-55.

60. Mr. Moore has not reviewed historical rainfall data. Moore Dep. (Feb. 8, 1990) at 53, 86, 147-49, 91.

61. In 1989, when Mr. Moore actually measured the water level in plaintiffs' wells, he found it to be, not low at all, but barely below the surface of the ground. In such conditions, he conceded, water would not flow from the plant site into the plaintiffs' wells. Moore Dep. (July 17, 1989) at 149.

62. Mr. Moore cannot say when or how often groundwater allegedly flowed under Slow Creek from the plant to plaintiffs' wells, *id.* at 151, 153; Moore Dep. (July 26, 1989) at 143.

63. Mr. Moore admitted in his deposition that he could not state any opinion as to when in the past chemicals at various concentrations would have been found in plaintiff's wells:

> Q: Have you been asked to provide an opinion on that?

A: I have been told, if I remember correctly that it would be desirable to determine when the highest concentrations occurred, yes. I don't know how to do that.

Id. at 91. Similarly, Mr. Moore later testified:

Q. . . . Do you have any opinion at all about how often, since the time the plant was constructed, that conditions on the north side of Slow Creek were sufficient to cause groundwater to flow under the creek?

A. I don't . . . we do not have a lot of records on how often the well went dry or anything like that.

Q. Do you have any anecdotal evidence about that the plaintiffs told you how often that --

A. Nothing -- I'm sorry.

Moore Dep. (July 26, 1989) at 143-45.

64. In opposition to the Motion to Exclude, plaintiffs submitted an Affidavit of Gerald Moore. The Moore Affidavit asserts in conclusory fashion that chemicals from the plant arrived at plaintiffs' wells as early as 1970. No effort was made in the Moore Affidavit to address any of the specific points made by Litton that are described in Findings of Fact at paragraphs 58-63 above. Instead, the bulk of the Moore Affidavit addressed the issue of whether the plant *could* have been the source of the chemicals found in 1987. As noted above, Litton has not contested that the plant is the source of the chemicals for the purposes of these motions.

65. Plaintiffs also originally designated Mr. Moore to opine that the concentrations in plaintiffs' wells were "likely significantly higher in previous years than those found since January 1987 when testing was begun." Plaintiffs' Supplemen-

tal Nomination of Expert Witnesses (June 30, 1989) at 12. In fact, the Moore Report suggests that, at some unknown time in the past, the concentration of TCE in the Carroll Well was approximately 600 ppb.

66. The average measured level of TCE in the Carroll Well is less than 20 ppb. Group Aff. Submitted In Support of Litton's Motions for Summary Judgment ("Group Aff.) at Table 1. (Throughout these Recommended Findings of Fact, the undersigned will cite or refer to only those portion of Litton's supporting affidavits that plaintiffs have not properly challenged in their oppositions.) Thus, Mr. Moore's conclusions, as set forth in the Moore Report, suggest that concentrations of TCE were roughly 30 times higher than average measured concentrations from 1987 to date.

67. Mr. Moore admitted that "there is not a standard procedure for the calculation of pollutant concentrations in the past." Moore Report at 9.

68. Mr. Moore also admitted that he did not consider himself an expert in the fate of organic chemicals in the environment. Moore Dep. (Feb. 8, 1990) at 164.

69. Mr. Moore admitted that "[t]he chemical analyses of groundwater from on-site and off-site wells do not show a decrease in the concentrations of pollutants during the sampling period (1987-1989)." Moore Report at 9.

70. Plaintiffs introduced Dr. Hugh Spencer in November 1989 as a witness who could supposedly supply what Mr. Moore could not, *i.e.*, expert opinion testimony concerning alleged prior concentrations of chemicals in plaintiffs' wells during particular years. To this end, Dr. Spencer prepared the report described above.

71. Dr. Spencer's controlling assumption is that it is meaningful to posit an "environmental half-life" for TCE, *i.e.*, to posit a fixed period of time in which any given concentration of TCE

in the environment degrades to one-half of its original concentration. Dr. Spencer attempted to derive such an "environmental half-life" for TCE by reviewing the scientific literature, most of which relates to laboratory, not field, studies. Then, choosing two half-lives, without giving particular citations for such half-lives, Dr. Spencer worked backward from measured or assumed concentrations in the Carroll Well. Letter from Hugh Spencer to Donna Holt, November 30, 1989 ("Nov. 30 Letter").

72. As set forth above, Dr. Spencer's estimates of TCE concentrations in prior years for the Carroll Well range to 27,000 ppb. This is more than 1,000 times the average measured concentration of less than 20 ppb.

73. This case is the first time in which Dr. Spencer has attempted to back-calculate an environmental concentration of TCE. Spencer Dep. at 1-176-77.

74. Dr. Spencer is not aware of any scientific literature which describes, let alone validates, a back-calculation of this type. *Id.* at 1-180, 2-76-77.

75. Dr. Spencer admitted that it was fair for Litton's counsel to characterize his calculations as "speculative." *Id.* at 2-236.

76. Plaintiffs filed an Affidavit of Dr. Hugh Spencer in opposition to the Motion to Exclude. In the Spencer Affidavit, Dr. Spencer admitted that his environmental half-life calculations constitute, at best, a "first approximation when . . . [the facts concerning alleged degradation of TCE in the environment] are not understood." Spencer Aff. at para. 10.

77. Mr. Moore testified that he had never come across the concept of an "environmental half-life" in the scientific literature. Moore Dep. (Feb. 8, 1990) at 225.

78. Mr. Moore admitted that he had never in his career as a hydrogeologist worked with or relied upon anyone who had

tried to back-calculate environmental concentrations for a 16-year period. Moore Dep. (Feb. 8, 1990) at 243-44.

79. A difference of about 1,400 percent exists between the two numbers that Dr. Spencer submitted for the high concentrations of TCE alleged to be present in the Carroll Well from 1970-1974.

80. Dr. Spencer admitted that he was unaware of any methodology to reduce the margin of error in such calculations. Spencer Dep. at 2-235.

81. In arriving at his opinions concerning an alleged environmental half-life of TCE, Dr. Spencer has virtually ignored available site data.

82. During his deposition, Dr. Spencer explained how one could derive an "environmental half-life" of a chemical by performing a regression analysis on a set of field data containing at least three different points. *Id.* at 1-105-07. Having derived the formula, Dr. Spencer then opined that it would be generally applicable and that he could have applied his statistical method to any well at or around the plant site. *Id.* at 1-125-26, 1-132-34. Dr. Spencer admitted that, although he believed that the data collected from the site were valid, he had not performed any calculations to determine a particular half-life for the Carroll Well, or any other plaintiff's well. *Id.* at 2-72-73, 2-138.

83. In his deposition, Dr. Spencer was shown actual data from the Carroll Well (from Fall 1987 through Fall 1989) and asked to calculate the "half-life" of TCE based on those data. After he had performed the calculation, Dr. Spencer refused to testify about the "half-life" he derived. *Id.* at 3-278. He conceded, however, that he could *not* observe any change of TCE concentrations at the Carroll Well over time, *id.* at 3-281, 3-284-85, that he thus could *not* observe a half-life of 1.5 to 2.0 years, *id.* at 3-285-87, and that he had no explanation for that discrepancy, *id.* at 3-288-89. *See generally id.* at 3-278-89.

84. Dr. Spencer acknowledged in his deposition that an expert would rather have site-specific numbers for environmental half-lives than numbers derived from the literature. *Id.* at 3-224.

85. Dr. Spencer conceded that, in the event site-specific data yielded a longer half-life than half-lives "derived" from the literature, the site-specific information would have to be used in attempting to back-calculate historical levels of chemicals. *Id.* at 3-227. Nevertheless, in his Affidavit submitted in opposition to Litton's Motion to Exclude, Dr. Spencer continued to ignore, without explanation, the Carroll Well site data.

86. According to Dr. Spencer, biodegradation is a major determinant in the environmental fate of chemicals. Dr. Spencer conceded that biodegradation rates vary from site to site. Spencer Dep. at 3-173, 3-175. He listed myriad site-specific factors that have to be taken into account in order to determine what is actually going on at any particular site. *Id.* Dr. Spencer admitted that he had failed to examine or obtain data concerning any of these factors, however. *Id.* at 3-174, 3-179, 3-181.

87. From Dr. Spencer's calculations for the Carroll Well itself, the maximum concentration of TCE in that well in 1970--if any chemicals were there at all--would have been virtually identical to the average measured concentrations.

88. Dr. Spencer did perform certain calculations with respect to well IW-1, which is the main industrial well at the plant and thus supplies the water used in the plant. At the time he performed the calculations, he was unaware that IW-1 was a pumping well and was unaware of the interim remedial measures that Litton has implemented at that well. *Id.* at 1-90, 1-92-93, 1-123. Both of these factors would significantly affect changes in concentration of TCE over time and, according to Litton's experts on the fate of chemicals, *see* Affidavit of Drs. Cass T. Miller and F. Michael Saunders, University of North Carolina, Chapel Hill, and Georgia Institute of Technology,

Atlanta ("Miller/Saunders Aff."), para. 6, invalidate the use that Dr. Spencer attempted to make of IW-1 data. Plaintiffs did not take issue with the reasoning offered by Drs. Miller and Saunders. Instead, without explanation, Dr. Spencer simply repeated in his affidavit his reliance on data from IW-1.

89. Plaintiffs failed to offer any explanation concerning the admission in Dr. Spencer's deposition that calculations from actual data for the Carroll Well contradicted Dr. Spencer's belief in an "environmental half-life of TCE" of from 1.5 to 2.0 years.

90. In his opinion letter, Dr. Spencer cited a paper by Dr. Paul Roberts, Stanford University, concerning a 1983 study of the fate of chemicals in a specific aquifer near Palo Alto, California. In his deposition, Dr. Spencer repeatedly cited the Dr. Roberts' paper as support for the type of calculations that Dr. Spencer was purporting to make. Spencer Dep. at 1-56, 2-43, 2-46, 2-49, 2-53, 3-206.

91. In support of its Motion to Exclude, Litton submitted an Affidavit from Dr. Roberts ("Roberts Aff.") Having reviewed a transcript of Dr. Spencer's deposition and Dr. Spencer's report, Dr. Roberts opined that Dr. Spencer's "extrapolation approach is imprudent and prone to enormous error." Roberts Aff. at para. 1.[1]

92. Litton's experts, Drs. Miller and Saunders, testified by affidavit that "neither the Roberts paper, nor any other peer reviewed paper supports the notion that a so-called environmental half life can be used to calculate concentrations 17 years in the past." Miller/Saunders Aff. at para. 4. They concluded:

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[1] According to unrebutted affidavit testimony of Litton's experts, the Roberts study is not relevant in any event to the Litton site because it was conducted in a different type of aquifer and because, according to the report itself, Dr. Roberts was not certain whether the observed decrease in TCE concentrations was due to biodegradation, adsorption, or dilution. *See* Miller/Saunders Aff. at para. 4.

> [W]e have reviewed the scientific literature and can find no reference to the use of such a methodology for the back-calculation of environmental concentrations, as Dr. Spencer has attempted. In our experience, we have never before seen or heard of such a method, and we find that Dr. Spencer's methods violate well-established precepts of subsurface investigation and modeling.

Id. at para. 3.

93. In response to the Miller/Saunders affidavit, plaintiffs contended that half-lives are commonly used in science to predict the *future* fate of chemicals. However, neither plaintiffs nor Dr. Spencer have offered any citation to any report, published or unpublished, in which Dr. Spencer's methodology has ever been used, approved, or even disucssed for the purpose of back-calculating concentrations of chemicals in groundwater.

94. Dr. Spencer is a Professor of Chemical Engineering at the Speed Scientific School of the University of Louisville. He is not a registered professional engineer. Spencer Dep. at 1-139.

95. Dr. Spencer never took any courses in geology or hydrogeology. *Id.* at 1-136, 1-140, 1-142. He admitted that he did not consider himself an expert in hydrogeology or in the modeling of groundwater flow. *Id.* at 1-219.

96. Dr. Spencer admitted that he received no formal training concerning the fate of organic chemicals in the environment, *id.* at 1-137, 1-139, 1-142-44, and never did any environmental modeling throughout his academic training, *id.* at 1-141-42.

97. Dr. Spencer never directed research on the fate of chemicals in an underground regime, *id.* at 1-203, or on the fate of TCE in any milieu, *id.* Dr. Spencer has never published anything concerning the movement of contaminants in ground-

water or the fate of TCE anywhere in the environment. *Id.* at 1-206.

98. Dr. Spencer admitted at his deposition that he had not read all of the pertinent articles concerning TCE, but hoped to do so during the next five or ten years. *Id.* at 1-67.

99. Dr. Spencer assumed that TCE was in plaintiffs' wells in 1970. He is unable to provide expert testimony on that issue, however. *Id.* at 3-161. Accordingly, he assumed that Gerald Moore, plaintiffs' hydrogeologist, would provide an adequate basis for that opinion. *Id.* at 3-162.

100. Both Dr. Spencer and Mr. Moore admitted that adsorption slows the movement of certain chemicals in groundwater, including TCE, even assuming *water* from the plant site reached the plaintiffs' wells in 1970. *See* Spencer Dep. at 3-163, 4-148-49 (to estimate hypothetical travel time to plaintiffs' wells, one would need to know the retardation factor, which is based on adsorption); Moore Dep. (Feb. 1990) at 133; *see also* Spencer Dep. at 1-231 (TCE would be adsorbed); Moore Dep. (Feb. 1990) at 77 (same).

101. Dr. Spencer admitted that there were circumstances from which one could reasonably conclude that retardation was particularly significant near the Clifton plant. Spencer Dep. at 3-209, 4-231-32.

102. Neither Dr. Spencer nor Mr. Moore made any site-specific measurements to quantify the effect of adsorption. Spencer Dep. at 4-149; Moore Dep. (Feb. 1990) at 134, 237. Thus, it is impossible for Dr. Spencer or Mr. Moore to say, to a reasonable degree of scientific certainty, how long TCE would have taken to get to the plaintiffs' wells--if in fact contaminated water from the plant ever migrated there in defiance of the hydrogeological barrier of Slow Creek.

C. Findings of Fact on Litton's Motion on Causation

103. Plaintiffs have been unable to obtain any opinions to a reasonable degree of medical certainty that the actual measured concentrations of chemicals in plaintiffs' wells caused any of plaintiffs' alleged health effects.

104. Plaintiffs admitted, without developing new evidence establishing higher levels of chemicals at specific earlier times, that their expert witnesses were unable to establish a *prima facie* case on medical causation.

105. In opposition to Litton's Motion on Causation, plaintiffs submitted to the Court, *inter alia*, a Joint Affidavit of their three experts on medical causation: Drs. Feldman, Broughton, and Rodgers. The Joint Affidavit, paragraph 26, admits, in part, that these experts are unable at this time, without reliance on the opinions of Dr. Spencer, to provide any opinion evidence on medical causation, to a reasonable degree of medical certainty, with respect to any plaintiff. Rather, plaintiffs' experts aver that, in the event that Dr. Spencer's conclusions are excluded from the case, they would need additional time to review the facts before determining what additional opinions, if any, they might be prepared to offer.

106. Plaintiffs have no expert evidence at this time, to a reasonable degree of medical certainty, that TCE at the measured concentrations in the Carroll Well caused any of plaintiffs' claimed health effects.

107. Plaintiffs lived, worked, or visited for varying periods of time near Litton's plant in Murphy, North Carolina.

108. In early 1987, Litton discovered that certain wells near the plant contained extremely low levels of chlorinated organic compounds, *i.e.*, levels averaging in the low parts per billion. As a point of reference, one part per billion (ppb) is the equivalent of one second in 31.7 years. Upon discovery of the presence

of such chemicals, Litton supplied plaintiffs with bottled water. Subsequently, Litton installed carbon adsorption filters on plaintiffs' wells.

109. A panel of distinguished experts in toxicology, epidemiology, immunology, neurology, and internal medicine jointly submitted an affidavit in support of Litton's motion for summary judgment on medical causation ("Group Aff."). In addition, Litton submitted a separate affidavit of Dr. Peter Shields, who is board-certified in the fields of internal medicine and oncology and who has substantial experience in the area of occupational medicine ("Shields Aff.") The undersigned will cite only those portions of the Group Affidavit and Shields Affidavit that were not contradicted by plaintiffs' experts in the affidavits submitted in opposition to Litton's motions for summary judgment.

110. Plaintiffs have been examined by numerous physicians, including more than 120 treating physicians (some of whom were consulted specifically as a result of plaintiffs' alleged exposure) and independent medical examiners pursuant to court order. *Not one* of the examining physicians has been able to ascribe any of plaintiffs' physical complaints to the alleged exposure to chemicals.

111. Dr. Kendall Green, a toxicologist and board-certified internist at Duke University Medical Center who has studied the alleged toxic effects of TCE, was visited in April 1987 by Fred Allen Chambers and Barbara Messer because of their alleged exposures. After having thoroughly examined and tested them, Dr. Green concluded, with respect to both, that "I am unable to relate any of [their] complaints and symptoms to a possible intoxication with trichloroethylene . . .." Dr. Green's Reports (Att. 73). *See* Deposition of Dr. Kendall Green, M.D., Ph.D. (Att. 61) at 6, 12, 17-18, 22-23, 27-33.

112. Plaintiffs' experts concede that risk is not attendant upon every measurable dose; at some sufficiently low level of

exposure or dose, virtually all compounds carry no measurable or predicted risk of noncarcinogenic effects. The "break-point" or "threshold" is that nonzero dose at which the risk of an adverse response cannot be distinguished from zero. As a qualitative and quantitative matter, essentially all chemicals have been shown or are considered to have thresholds for noncancer health effects. One cannot consider even the potential that exposure to a chemical caused a particular result without comparing the actual dosage to the known threshold levels for the various chemicals.

113. The types of physical complaints that plaintiffs' experts attribute to plaintiffs' alleged exposure to chemicals includes headaches, dizziness, tingling sensations, numbness, anxiety, forgetfulness, back, leg, and arm pains, among others.

114. There are many studies of *occupational* (*i.e.*, substantially higher) exposures to some of these chemicals, TCE in particular, which fail to show adverse health effects. The United States Occupational Safety and Health Administration ("OSHA") has set a permissible daily exposure limit ("PEL") of 50 ppm and a short-term exposure limit of 200 ppm. Group Aff. at paras. 23, 45. Even if the alleged historical concentrations assumed by Dr. Spencer are considered, TCE air concentrations in plaintiffs' homes from 1970 to 1974 would still have been "18-fold lower than those considered safe by OSHA." Group Aff. at para. 23.

115. None of plaintiffs' asserted injuries are uniquely associated with chemical exposures at any level. Plaintiffs attribute all manner of ordinary, everyday complaints to their exposure to TCE, including headaches, fatigue, nausea, and so forth. Plaintiffs' experts do not dispute that there are innumerable causes of these frequent human problems.

116. Many of plaintiffs' alleged symptoms appear to have worsened since 1987, despite the fact that exposure to the chemicals substantially stopped when they were discovered.

Thus, some plaintiffs who visited neurologist Dr. Jack Scariano in 1989 complained about facial numbness, a nonspecific complaint that is found in a variety of ailments. Shields Aff. at para. 11. Plaintiffs had generally never complained about such facial numbness prior to their visits to Dr. Scariano. Similarly, in a medical evaluation sheet dated February 18, 1987, plaintiff Keith Scott Gentle indicated that he did not have problems with dizziness, frequent headaches, or shortness of breath. On an April 21, 1988, questionnaire, answered when this litigation was contemplated, he *did* complain of shortness of breath, but still declined complaint of dizziness or headaches. On a December 17, 1988, questionnaire, answered after this lawsuit had begun, he complained for the first time about dizziness and headaches. *See* Medical Evaluation Sheet for Feb. 18, 1987 (Attachment 50 to Litton's Appendix in Support of Motion on Causation); Keith Scott Gentle's Neurological Questionnaires (Attachment 53.b).

117. A number of plaintiffs cannot even be said to be suffering from illnesses or injuries, let alone illnesses or injuries related to exposure to chemicals.

118. Dr. Harold Schutte is a Board-certified pediatrician and has been teaching and practicing at Memorial Mission Hospital for many years. Pursuant to court order, he examined the child plaintiffs (Charles Hancock, Jr., Rusty Chambers, Walter Derrick Gaddis, Justin Gaddis, Jennifer Simonds, and Jonathan Messer). His reports (Attachment 30 to Litton App.) show that all of the children are normal and healthy. The most pertinent observations are set forth below:

> *Jonathan Messer* -- This patient's health is excellent . . . This patient has done exceptionally well . . . He is in the 93rd percentile for height [and] the 75th percentile for weight. [He] shows no evidence of any neurological impairment . . . . Urinalysis . . . normal . . . Blood liver profile studies . . . WNL [within normal limits] for a child.

Justin Gaddis -- [H]is general health has been good . . . This child developed all milestones on time and toilet trained at two years . . . his grades were average or a little above in the range of "A" & "B" . . . [t]his patient is an oriented, well-developed, well-nourished, eight year old white male . . . mature for his stated age . . . essentially a normal blood count . . . .

Walter Derrick Gaddis -- [T]his young man's general health has been good . . . . All developmental parameters have been met on time to date. He walked at 8 1/2 months which is actually early . . . he had the usual amount of recurrent ear and respiratory tract congestion problems . . . he has had no major injury or illness . . . 75th percentile [height] [and] 78th percentile for weight . . . . Laboratory studies . . . WNL . . . .

Jennifer Wimpey -- This patient's general health is excellent . . . . This patient's development has been right on schedule with all parameters of development within the normal limits . . . . Normal four-year old white female patient, who is slightly above weight, but is in good health otherwise. Urinalysis . . . within normal range . . . . Blood liver profile studies . . . within normal range . . . . 3 atypical lymphs [which is] a slightly elevated count but not significant clinically.

Rusty Chambers -- In general, this patient's health is good . . . he made very high grades in the first year [of school] . . . has no learning disorders and . . . has done very well. . . He is fully ambulatory. He interacts with the examiner, and his mother, appropriately. Normal seven year old white male patient, in good health . . . . Laboratory studies . . . WNL.

> *Charles Hancock, Jr.* -- This patient's general health is good . . .. His developmental history reveals that he met most of the early developmental milestones on time. The patient has been seen in the last year for a football physical . . . no major problems . . .. [He is] 95th percentile for height, and he is one standard deviation above the 95th percentile for weight . . . . Normal 11 1/2 year old white male who is above average in stature. Laboratory studies . . . WNL . . . .

119. Similarly, plaintiffs' expert, Dr. George Rodgers, concluded that none of the children had any symptoms that were probably related to exposure to TCE. *See* Dr. Rodgers' Table of Symptoms (Attachment 31 to Litton's App. in Supp. of Summary Judgment Motions).

120. Plaintiffs offered no medical expert testimony that plaintiffs Melanie Messer and Sandra Hancock suffered from any illnesses or injuries related to their alleged exposure to TCE.

121. During his deposition, James "Kenny" Green admitted that he was *not* claiming that he, himself, had suffered any nervous-system damage, gastrointestinal disorders, liver damage, skin disorders, immune-system damage, or any other "symptoms, ailments, injuries of any kinds that [he] attribute[d] to the chemicals in [his] water." Deposition of James "Kenny" Green at 51-52 (Attachment 11). Nor had any physician ever told him that his alleged exposure to chemicals put him at risk for any disease. *Id.* at 53.

122. During his deposition, Marvin Garrett, too, admitted that he was not "alleging in this lawsuit that [he has] suffered any physical injury as a result of being exposed to chemicals that have come from the . . . plant either in the groundwater or in the air." Deposition of Marvin Garrett at 27. Instead, he testified that he is participating in the lawsuit, apparently, to recover money that he gave to Barbara Messer, his fiance, for doctors' visits, travel, telephone bills, and "power bills." *Id.* at 27-29.

123. Independent medical examiner Dr. Cecil Durham, a neurologist, examined the adult plaintiffs whose alleged exposure to TCE was among the highest and concluded that they are neurologically normal. *See* Dr. Durham's Reports (Attachment 28) for Ancy Wimpey ("normal neurological examination"), Barbara Messer (same), Keith Scott Gentle (same), Debbie Chambers (same), Fred Allen Chambers (same), Martha Carroll (same), James Carroll, Jr. (normal examination).

124. A number of adult plaintiffs were examined by neurologist Dr. Jack E. Scariano at the request of plaintiffs' attorneys. Dr. Scariano was originally named as an expert witness by plaintiffs, but then withdrawn. Dr. Scariano concluded from his examinations of plaintiffs that most were clinically normal in virtually every respect. *See* Deposition of Jack E. Scariano at 31 ("didn't see any problems" in James Carroll, Jr.'s examination), 41 (Rosetta Rogers "completely normal"), 47-48 (nothing in Martha Carroll's examination to corroborate her complaints), 54 (Debbie Chamber's examination negative), 61 (Fred Allen Chambers normal), 80-84 (Belinda Gaddis' examination "totally normal"), 87 (James Kenny Green's examination "completely normal"), 95 (neurological examination of Peggy Green "completely normal"), 97 (James Messer had "completely normal neurological examination") (Attachment 22).

125. Plaintiffs identified four witnesses who would assertedly opine that some plaintiffs' complaints were caused by exposure to the chemicals at issue.[2] First, plaintiffs named Dr. Alan Broughton to opine that plaintiffs suffered from immu-

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[2] Plaintiffs originally named neurologists Jack Scariano and Berta Bergia as expert witnesses as well. They were named, *not* to provide opinions concerning causal relationships, however, but merely to provide data to Dr. Feldman. Drs. Bergia and Scariano almost invariably characterized their findings of plaintiffs as normal in every respect. *See* Deposition of Jack E. Scariano at 31, 41, 47-48, 54, 61, 64, 76-77, 80-84, 87, 95, 97 (Attachment 22); Deposition of Berta Bergia at 86, 93-94, 99-100, 110-11, 117-18, 128-30, 133, 138-39, 144-47, 153-54, 157-58 (Attachment 15).

nological problems caused by the alleged exposure. Second, plaintiffs named Eric Engum, Ph.D., to opine that certain cognitive or emotional problems of some plaintiffs were caused by the alleged exposure to chemicals. Third, plaintiffs named Dr. Robert G. Feldman to opine that plaintiffs suffered from neurological problems caused by the alleged exposure to the chemicals at issue. Finally, plaintiffs named George C. Rodgers, M.D., Ph.D., a toxicologist.[3] Dr. Rodgers offers opinions that a limited set of plaintiffs' alleged physical problems has been caused by their alleged exposure to TCE.

126. Litton's Motion on Causation is based upon the alleged inadmissibility and insufficiency of the proposed testimony of Drs. Broughton, Engum, Feldman, and Rodgers. They are discussed below, *seriatim*.

1. *Dr. Alan Broughton*

127. Dr. Alan Broughton is a pathologist who does not treat patients. Broughton Dep. at 93.

128. Dr. Broughton never examined or interviewed the plaintiffs. *Id.* at 1-91-92, 1-326, 3-54-55.

129. Dr. Broughton runs a laboratory where he attempts to measure various aspects of the human immune system. *Id.* at 1-57-59. He ran certain tests upon blood drawn from many, but not all, of the plaintiffs.

130. Litton challenges the methodology of Dr. Broughton's analyses on a variety of grounds, but such challenges are not germane to Litton's Motion on Causation with respect to Dr. Broughton.

131. Dr. Broughton purported to find two types of effects in plaintiffs' immune systems. First, he purported to find increased levels of certain T-lymphocytes, suggesting immune

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[3] Plaintiffs originally named William L. Marcus, Ph.D., as their expert toxicologist. He was withdrawn as an expert when the undersigned allowed plaintiffs to name Dr. Rodgers.

system activation. Second, he purported to find increased levels of autoantibodies, *i.e.*, immune cells that might improperly regard certain human cells as foreign.

132. Dr. Broughton was unable to testify that any plaintiff has a disease or injury caused, or probably caused, by that plaintiffs' alleged exposure to TCE. Broughton Dep. at 1-369, 1-372. In Dr. Broughton's words: "The defense claims that I have not made a diagnosis in these patients. They are correct." Broughton Aff., para. 17.[4]

133. Dr. Broughton admitted that he did not know whether the levels of T-lymphocytes he found in plaintiffs were significant in any respect. Broughton Dep. at 1-306.

134. Dr. Broughton admitted that, notwithstanding the alleged presence of autoantibodies in plaintiffs, he could not testify that any plaintiff in fact had an autoimmune disease. *Id.* at 1-91.

135. Dr. Broughton affirmatively testified that plaintiffs "don't have immune system disease." *Id.* at 3-100.

136. Dr. Broughton testified that there were numerous other possible causes of the subclinical findings he made in

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[4] *See* Broughton Dep. at 4-69 (James Messer has no disease), 4-69-70 (Jonathan Messer has no health problems), 4-70-71 (Jennifer Wimpey has no disease), 4-71-72 (Rosetta Edwina Rogers has no disease that would be recognized by the "scientific community" or "medical community"), 4-81 (Ancy Simonds Wimpey has no disease), 4-84 (Marvin Garrett has no evidence of health effects relating to TCE), 4-85-86 (James Carroll Sr. has no disease that would be accepted as such "in the scientific community"), 4-101-02 (medical science would not conclude that Deborah Chambers has a past or present disease related to TCE exposure), 4-111 (Rusty Chambers has no past or present disease caused by TCE), 4-124 (James Carroll, Jr. has no past or present disease caused by TCE); 4-132 (same for Phyllis Ann Carroll), 4-136 (Martha Carroll has no disease related to TCE), 4-150 (Belinda Gaddis has no past or present disease related to TCE), 4-158-59 (same for Randy Gaddis), 4-162 (same for Fred Allen Chambers), 4-171 (same for Melanie Messer).

plaintiffs, such as: residential exposure to chemicals not in issue here--chlordane and formaldehyde--(Broughton Dep. at 1-123-24), various diseases (*id.* at 1-125), drugs (*id.* at 1-407, 3-247), the common cold and allergies (*id.* at 1-408), viral infections (*id.* at 2-440), arthritis (*id.* at 2-441), alcohol (*id.* at 3-246), work-place exposure to chemicals (*id.* at 4-39-41, 4-44-46, 4-65-68), and prescription medications (*id.* at 4-50, 4-63).

137. Dr. Broughton attempted to compare the immune-system data gathered from plaintiffs to those of a purported "control" group. He testified, however, that his "control" group was "admittedly not age matched," (*see* Broughton Affid. at paras. 5, 7, 8(2)), nor was it matched geographically, (*id.* at para. 8(1)), nor was it controlled for the presence of non-TCE-related diseases that could have caused the appearance of autoantibodies, (*id.* at para. 8(3)), such as the common cold.

138. Dr. Broughton admitted that there is no evidence in the medical or scientific literature that ingestion of *any* chlorinated solvents such as TCE can induce the production of autoantibodies. *Id.* at 1-69-71.

139. Dr. Broughton admitted that the presence of autoantibodies was not regarded in the scientific community as an indicator of TCE exposure. *Id.* at 4-36, 4-39.

140. Dr. Broughton could not say what risk, if any, the plaintiffs allegedly had for developing any immune disease in the future. *Id.* at 89, 3-110-12. He could not state whether *any* plaintiff would likely ever develop clinical manifestations relating to his subclinical findings. *Id.* at 1-89, 1-108-09, 1-416-18, 3-110-12, 3-149-50.

141. Dr. Broughton admitted that the medical community would not regard his laboratory findings as evidence of the existence of any illness. *Id.* at 2-416-17.

142. Dr. Broughton conceded that there is "not general agreement in the scientific community . . . as to whether autoan-

tibodies are an indicator of future disease or an indicator of beneficial influence." *Id.* at 3-234; *see also id.* at 2-416, 3-232 ("significance of . . . autoantibodies in healthy individuals . . . is not yet clear").

2. *Dr. Eric Engum*

143. Dr. Engum testified that, in his opinion, two of the plaintiffs (Martha Carroll and Debbie Chambers) suffer from some type of "atypical organic brain syndrome."

135. Dr. Feldman asked that Dr. Engum's report concerning Mrs. Carroll and Mrs. Chambers be reviewed by Dr. Roberta White, a colleague of Dr. Feldman. Dr. White testified that the neuropsychological test results upon which Dr. Engum based his opinion could not be attributed to "organic brain syndrome" because of the very low Intelligence Quotients ("IQ's") of Mrs. Carroll and Mrs. Chambers. White Dep. at 1-8-13.

144. In any event, Dr. Engum repeatedly admitted that he could not draw any causal relationship between such alleged conditions in Mrs. Carroll and Mrs. Chambers and the alleged exposure in this case. Engum Dep. at 84, 95, 226-27.

145. Plaintiffs did not offer any affidavit from Dr. Engum in opposition to Litton's Motion on Causation.

146. Dr. Engum examined three other plaintiffs: Belinda Gaddis, Rosetta Rogers, and Fred Chambers. He found that Mrs. Rogers and Mrs. Gaddis were perfectly normal neuropsychologically. *Id.* at 68, 78. Although Dr. Engum found minor deficits in Mr. Chambers' functioning, he also found Mr. Chambers to do very well in certain areas. Accordingly, Dr. Engum could not diagnose "organic brain syndrome" in Mr. Chambers. *Id.* at 136.

3. *Dr. Robert Feldman*

147. Dr. Feldman admitted that he knew of no scientific literature that has shown that chronic consumption of drinking water with average concentration of TCE less than 20 ppb can cause any neurological impact. Feldman Dep. at 1-81-84.

148. Dr. Feldman admitted that TCE has been "very useful as an analgesic or general anaesthetic agent in clinical medicine." He admitted that he still believes that TCE can be used successfully in that manner. Feldman Dep. at 2-58 to 2-61.

149. Anaesthesia involves inhalation of TCE at concentrations of approximately 10,000 parts per *million* ("ppm") in air. *See* Group Aff. at paras. 126, 157. By contrast, based on measured concentrations, plaintiffs could have been exposed, at most, to 0.032 ppm in their air, *i.e.*, 300,000-fold less. *Id.* at para. 23.

150. Dr. Feldman testified that he is unaware of any report of injury to the nervous system as a result of TCE *per se*. Feldman Dep. at 2-7 to 2-8. This admission is significant. Plaintiffs did not even attempt to rebut Litton's expert testimony that earlier studies of industrial or medical exposures involving TCE associated those exposures with some neurological impairments; that careful analysis of the circumstances of those events leaves no doubt today, however, that they were likely caused by dichloroacetylene, a breakdown product of TCE when it is exposed to high temperatures, metal surfaces, and strongly alkaline conditions; and that such conditions could not have occurred in plaintiffs' homes. Group Aff. at paras. 141-45, 149-51.

151. During the initial session of his deposition, in July 1989, Dr. Feldman admitted that he could not, with respect to *any* of the plaintiffs, express an opinion on causation to a reasonable degree of medical certainty. Feldman Dep. at 1-61-62, 1-130, 1-134-35, 3-149 (Dr. Feldman has "no opinions as to

causation as to any of the plaintiffs to a reasonable degree of medical certainty").

152. Dr. Feldman stated that, in order to render any such opinion, he would, among other things, have to rule out all other possible causes of the alleged illness or impairment. *Id.* at 1-71, 3-79-80.

153. Dr. Feldman also declared that, before he could render a reliable opinion concerning causation, he would need to correlate exposure data with the alleged appearance and course of the various physical complaints. *Id.* at 1-71-73.

154. In addition, Dr. Feldman refused to render any opinions to a reasonable degree of medical certainty until a colleague, Roberta White, Ph.D., reviewed neuropsychological reports on all of the plaintiffs. *Id.* at 1-113. None of the plaintiffs had been administered the complete neuropsychological test battery that Dr. Feldman required. *Id.* at 1-68-69, 1-71.

155. As of July 1989, virtually the only data that Dr. Feldman felt supported plaintiffs' claims of injuries were the results of some blink reflex tests conducted by Dr. Berta Bergia in 1988 and 1989.

156. Dr. Bergia herself believed that the blink reflex data she collected from plaintiffs in April 1989 were within normal limits. *See* Bergia Dep. at 86, 93-94, 99-100, 110-11, 117-18, 128-30, 133, 138-39, 144-47, 153-54, 157-58.

157. Dr. Feldman disregarded Dr. Bergia's interpretations of the data and characterized them as suggesting neurological damage in some plaintiffs. *See* Feldman Dep. at 1-118-19, 3-12.

158. After his July 1989 deposition, however, Dr. Feldman reviewed the transcript of Dr. Bergia's deposition, at plaintiffs' request, to determine whether Dr. Bergia was actually qualified to administer the tests upon which Dr. Feldman was relying as the basis for his opinions. *Id.* at 4-88.

159. After review of Dr. Bergia's deposition transcript, Dr. Feldman concluded:

> *[Bergia] disqualified herself* . . .. [by revealing that her] training in blink reflexes was *only two additional* patients . . . [that] [s]he is confused about direct response vs. facial nerve response . . . [that] she did not provide her own controls . . . [that] [s]kin temperature was not always measured . . . [and that] she did not keep to the protocol . . ..

Id. at 4-88-98, *discussing* Letter from Dr. Feldman to Donna Holt (11/14/89) (emphasis in original). Dr. Feldman concluded that Dr. Bergia's "blink reflex data are severely in question." *Id.*; *see* Feldman Dep. at 4-87, 4-98.

160. Plaintiffs' counsel repeatedly told the undersigned, on the basis of Dr. Feldman's November 14, 1989, letter to counsel, that Dr. Bergia's blink reflex data were invalid and that, as a result, plaintiffs should be entitled to further extensions of the discovery deadlines. *See* Findings of Fact at paras. 42, 155-159 above. The undersigned granted the requested extensions in part for that reason.

161. On January 30, 1990, just prior to the last cut-off date for provision of expert opinions established in the discovery schedule, Dr. Feldman issued separate "opinion" letters for each of 12 plaintiffs: James Carroll, Sr., Martha Carroll, James Carroll, Jr., Belinda Gaddis, Randy Gaddis, Rosetta Edwina Rogers, Keith Scott Gentle, Barbara Messer, Ancy Simonds, James Messer, Deborah Chambers, and Fred Allen Chambers. The "opinion" letters failed to include any final opinion, to a reasonable degree of medical certainty, that plaintiffs' alleged neurological complaints were, in fact, caused by exposure to TCE. Instead, the letters noted that any such opinions would be conditional on the following:

subsequent receipt of confirmatory positive blink reflex data from a reliable electrophysiologist;

subsequent receipt of evidence of neuropsychological impairment obtained by a qualified neuropsychologist;

reliability of self-reporting on neurological questionnaires; and

ability to rule out other possible causes for plaintiffs' complaints.[5]

162. Ten plaintiffs visited Dr. Feldman and Dr. Clyde Niles, a colleague of Dr. Feldman, in *February* 1990 (after Dr. Feldman's final opinions were required to have provided by the undersigned's Order). Of the 12 plaintiffs for whom Dr. Feldman had written "opinion" letters, two--Ancy Wimpey and Randy Gaddis--did not go to Boston for examination by him and Dr. Niles.

163. Dr. Niles has testified that he has had substantial experience in his career in measuring the blink reflexes of people allegedly exposed to TCE. Niles Dep. at 14; Feldman Dep. at 6-44-45. Dr. Niles is certified by the American Board of Neurology and Psychiatry and by the Board of Electrodiagnostic Medicine. Niles Dep. at 6. He had three intensive years of training in electromyography. *Id.* at 6-7. Significantly, he testified that he had intensive training in the administration of

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[5] Dr. Feldman's "opinion" letter for plaintiff Rosetta Edwina Rogers provides a typical example. Dr. Feldman wrote:
"I am assuming the correctness of the exposure data, electrodiagnostic study test results as reported by Dr. Bergia, with confirmation to be obtained upon repeat testing to be performed under my direction on this individual . . . ." *See* Attachment 32. Similarly, his letter for plaintiff Martha Carroll reads, in part, that "I am . . . assuming the correctness of the results of neuropsychological tests reported by Dr. Engum, with confirmation to be obtained upon repeat testing to be performed under my direction on this individual . . . ." *See id.*

the blink reflex test. *Id.* at 11-12 (six months of training and administration of 60 blink reflex tests under supervision).

164. At Dr. Feldman's request, Dr. Niles administered the tests to the 10 plaintiffs and obtained normal results for each. Indeed, for nine plaintiffs, the results were substantially better than the results obtained by Dr. Bergia. Dr. Niles, despite his expertise, was not asked by Dr. Feldman to review Dr. Bergia's data. Niles Dep. at 31.

165. According to Dr. Niles, the plaintiffs' data did *not* look like what he would have expected if they had, in fact, been exposed to the alleged concentrations of TCE for the alleged length of time. Niles Dep. at 24 (one would expect to see abnormal R1 latencies), 80 (one would *not* expect to see 10 out of 10 people with normal blink reflex data if they had been exposed to TCE in their drinking water for 15-18 years).

166. As noted above, Dr. Bergia considered her own blink reflex results on plaintiffs to be normal. Similarly, Dr. Niles opined that the tests *he* ran on plaintiffs proved normal. Dr. Feldman's apparent response to these opinions in his affidavit is to dispute whether a normal result really means normal. Feldman Aff. at para. 19-20. His explanation is that "some individuals with the [unspecified] disease will have values that lie within normal limits." *Id.* at 20.

167. Dr. Feldman concluded that Rosetta Rogers had a "normal neurological examination." Feldman Dep. at 5-45.

168. Dr. Feldman concluded that Belinda Gaddis's "neurological examination was completed within normal limits." *Id.* at 5-6-7.

169. Dr. Feldman could not provide any clinical diagnosis for Deborah Chambers. *Id.* at 6-186-87.

170. Dr. Feldman concluded that James Messer's examination "was within normal limits, except for hypoactive reflex . . . related to an old gunshot injury." *Id.* at 5-68.

171. With respect to plaintiffs Martha Carroll and Deborah Chambers, Dr. Feldman's "opinions" were qualified on the basis of expected confirmation of the neuropsychological deficits allegedly observed by Dr. Engum. *See, e.g.*, Feldman Dep. at 5-204. The confirmations were to be obtained "on repeat testing." *Id.* at 5-204-06. None of the plaintiffs, however, was sent for repeat testing as Dr. Feldman required.

172. In addition, Dr. White, to whom Dr. Feldman sent Dr. Engum's data concerning Martha Carroll and Deborah Chambers, could not confirm that the observed deficits were typical of what she describes as "TCE encephalopathy."

173. With respect to Fred Allen Chambers, Dr. White could not identify any alleged neuropsychological impairment that could not have resulted from an automobile accident in 1975, in which Mr. Chambers' infant daughter was killed and in which Mr. Chambers himself was critically injured, suffering a severe concussion, fractured nose, blood pressure of 0/0, and pneumothorax, among other injuries, and requiring him to spend months in the hospital.[6] Although Dr. Feldman's affidavit asserts that Mr. Chambers "has suffered organic brain damage," Dr. Feldman has no expertise in neuropsychology, and his statement conflicts with the testimony of Dr. Engum, the only neuropsychologist designated by plaintiffs as an expert in this case.

174. Dr. Feldman admitted that lack of complete information about plaintiffs' medical histories might confound his ability to render opinions concerning medical causation. Feldman Dep. at 3-25-26, 4-86-87.

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[6] *See* White Dep. at 1-25-26 (depression can have multiple causes), 1-45, 2-36 (alleged "cognitive inflexibility" could have been caused by accident), 2-31 (shock as a result of accident could have caused hypoxia that damaged the deep temporal structures of Mr. Chamber's brain, causing difficulties in delayed memory); Feldman Dep. at 6-48-49 (person such as Mr. Chambers with blood pressure of 0/0 would usually not survive more than three to five minutes). *See also* Engum Dep. at 1-57, 172.

175. Dr. Feldman admitted that before an alleged exposure can be considered as a possible cause of an alleged effect, one must establish that the exposure precedes the effect. Feldman Dep. at 5-32. For that reason, Dr. Feldman's questionnaire asked each plaintiff to state when his or her alleged complaint began. Most of the plaintiffs failed to provide the required information, however. *See, e.g.*, Feldman Dep. at 5-32 (Belinda Gaddis), 5-66 (Rosetta Rogers), 5-236-39 (Martha Carroll), 6-187-88 (Deborah Chambers).

176. When Dr. Feldman interviewed the 10 plaintiffs for the purpose of supplementing their questionnaire responses, he failed to ascertain from them when their symptoms began. Dr. Feldman testified that he was more concerned about plaintiffs' present status than about establishing causation. Feldman Dep. at 5-32 (Belinda Gaddis), 5-66 (Rosetta Rogers), 5-236-39 (Martha Carroll).

177. Dr. Feldman admitted that using questionnaires as a basis for rendering opinions concerning medical causation was fraught with weaknesses. Feldman Dep. at 4-112. He admitted that it was "very difficult" to rely on such questionnaires in coming to opinions on medical causation. *Id.* at 5-91.

178. Prior to the lodging of this lawsuit in October 1988, plaintiff Keith Gentle filled out a questionnaire in which, among other things, he admitted that he had surgery and had sustained various football injuries, including trauma to his hands. He also represented that his headaches were "occasional." He also denied having dizziness or trouble sleeping. *See* Attachment 53.b to Litton's Motion on Causation.

179. In December 1988, after the lodging of the lawsuit, Mr. Gentle filled out another questionnaire in which he denied prior surgery and denied ever having had a traumatic injury to his hands. In addition, he claimed that he had "frequent" headaches and that he *did* suffer from dizziness and insomnia. *See id.*

180. When Dr. Feldman interviewed Mr. Gentle, he did not question Mr. Gentle about the discrepancies between the May 1988 and December 1988 questionnaires. Feldman Dep. at 5-278-90. Dr. Feldman could not explain why Mr. Gentle's alleged headaches, dizziness, and insomnia should have increased between May 1988 and December 1988, when exposure to TCE was nil. *Id.* at 5-288, 5-290.

181. Plaintiff James Carroll, Jr., denied having headaches in an April 1988 questionnaire, but asserted that he *did* suffer from headaches in a December 1988 questionnaire. *See generally id.* at 5-134-37. Dr. Feldman chose to believe the latter representation and "chose not to consider" the earlier denial of headaches. *Id.* at 5-135.

182. Dr. Feldman could not rule out many other potential explanations of plaintiffs' alleged neurological complaints. Thus, he could not rule out the possibility that the complaints of James Carroll, Jr., were due to lead poisoning, (Feldman Dep. at 3-132, 4-133-34)[7] emotional problems (*id.* at 5-141)[8] eye surgery (*id.* at 5-145)[9] or chewing tobacco (*id.* at 5-150-54).[10]

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[7] Dr. Feldman testified that the amount of lead known to cause neurotoxic effects is constantly getting lower and that no threshold concentration can be identified. Feldman Dep. at 4-133.

[8] Mr. Carroll was seen in 1977 for nervous shaking by Dr. Ralph Morgan, who commented that he "has been tense since I first knew him." *See* Appendix A to Answers of James Carroll Jr. to Litton's First Set of Interrogatories at 5 (entry regarding May 30, 1977) (Attachment 52.a). Dr. Morgan later observed that Mr. Carroll "was in a lot of trouble emotionally," a view confirmed by Dr. David Cayer of Winston-Salem. *Id.* (entry regarding July 7, 1977). *See also* Admission Report, July 7, 1977 ("there was probably a psychological background for the boy's symptoms") (Attachment 52.b).

[9] Mr. Carroll's medical records reveal that, as a six-year-old, he had eye surgery to correct a hereditary strabismus problem. *See id.* at 7. His ophthalmologist thereafter described his eyes as "weak." *Id.* at 9.

[10] Mr. Carroll has testified that he chews tobacco. *See* Answer to Interrogatory 24 (Attachment 52.c).

He also could not rule out the possibility that the complaints of James Carroll, Sr., were due to lead poisoning.[11] With respect to Belinda Gaddis, Dr. Feldman could not state that her complaints of mood changes, memory lapses, and decreased concentration were any different from those experienced by the majority of people from time to time (*id.* at 5-18-19) nor could he conclude that her migraine headaches were not brought on by causes other than alleged exposure to TCE (*id.* at 5-22-23). He admitted that tension could be a possible cause of her headaches, for example (*id.* at 5-24) as well as sinus infections and birth control medication (*id.* at 5-28-29). With respect to Rosetta Rogers, Dr. Feldman could not rule out the possibility that her complaints were due to her documented allergies to a variety of foods. *Id.* at 5-64-65.[12] Similarly, Dr. Feldman could not rule out the possibility that James Messer's headaches were caused by exposure to chemicals at his workplace (*id.* at 5-76-77)[13] nor could he rule out the possibility that they were caused by a 1985 automobile accident (*id.* at 5-84-88).[14] He likewise could not rule out the possibility that Martha Carroll's complaints were the result of psychosomatic syndromes (*id.* at

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[11] James Carroll, Sr. stated to Dr. Feldman that he has worked with lead solder in his occupation as an electrician. *See* Feldman Dep. at 5-166-67.

[12] Mrs. Rogers was shown to be allergic to milk, chicken, fish, coffee, and grapes, by Dr. Claude A. Frazier, who examined her in 1972. *See* January 6, 1972 Report of Dr. Frazier (Attachment 35). Nonetheless, she continues to consume two cups of coffee on a daily basis, eats chicken, turkey, or fish one to three times per week, eats grapes once a week, eats cheese and ice cream, and drinks milk. *See* Neurological Questionnaire at 9 (coffee), 15 (chicken, turkey, fish), 16 (grapes, milk, cheese, and ice cream).

[13] Mr. Messer was exposed to machine coolants in his occupation as a dyemaker from 1981-1988.

[14] In the accident, Mr. Messer suffered fractures of two vertebrae. Thereafter, he complained about pain in the base of his skull and headaches. Following the accident, Mr. Messer began to visit a chiropractor, whom he has now seen more than 60 times over the last five years. *See* Feldman Dep. at 5-84-88.

5-224),[15] estrogen imbalance due to her hysterectomy (*id.* at 5-231-35) smoking (*id.* at 5-239)[16] adverse reactions to prescription medications (*id.* at 5-245-47), or tension and sinusitis (*id.* at 5-247). He similarly could not rule out the possibility that Fred Allen Chambers's alleged tingling sensations resulted from his 1975 automobile accident (*id.* at 6-177) nor could he rule out the possibility that Deborah Chambers's alleged hypoactive reflexes were caused by a thyroid problem (*id.* at 6-194-95, 6-198).

183. Neither the Affidavit of Dr. Robert Feldman nor the Joint Affidavit submitted on behalf of plaintiffs purports to set forth a differential diagnosis with respect to any plaintiff or any particular complaint or attempts to show how any alternative potential causes of such complaints were ruled out. Instead, these documents state in a conclusory fashion that such differential diagnoses were performed.

184. The Affidavit of Dr. Feldman largely does not respond to the issues raised by Litton in its Motion on Causation. For example, Litton showed that Dr. Feldman could point to no evidence that TCE acts as a neurotoxin at the measured levels in this case. In response, Dr. Feldman cited a number of sources--many of them involving intentional inhalation of TCE to "get high"--without making reference to the levels of TCE involved or how they compare with the levels pertinent to this case. Feldman Aff. at paras. 1-4.

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[15] Dr. Engum concluded, in part, that, based on Martha Carroll's and Deborah Chambers's MMPI scores -- showing elevations on the hypochondriasis, depression, and hysteria scales -- both were likely to exhibit "conversion" behavior in which emotional stress is translated into physical symptoms. *See* Engum Dep. at 165-67 (Deborah Chambers), 219-24 (Martha Carroll). Similarly, John Clement, the independent neuropsychological examiner, concluded with respect to Mrs. Carroll that hers was a "Conversion profile."

[16] Dr. Feldman agreed that cigarette smoke contains carbon monoxide, which causes behavioral changes, headaches, dizziness, and memory problems. Feldman Dep. at 6-77.

185. Many of the studies cited by Dr. Feldman in his affidavit do not support the statements he makes in the affidavit. (Copies of these studies were provided to the undersigned, not by plaintiffs or by Dr. Feldman, but by Litton.) For example, Dr. Feldman cites McLeod, et al. as pertinent to TCE. In fact, the study deals principally with the combined effects of trichloroethane and "halothane," *i.e.*, 2-bromo-2-chloro-1,1,1-trifluoroethane, which has nothing to do with the facts of this case. *See* Feldman Aff. at para. 3; McLeod, et al. (Att. 70). Similarly, Levy (1986), involved a combination of TCE and dextroamphetamine ("speed"), another substance not involved in this case. In yet another instance, Stephens (1945) (Att. 72), one patient consumed whiskey in conjunction with swallowing TCE; the doctor reported that "[t]he odor of her breath was mainly that of whisky."Virtually all of the studies cited in the Feldman Affidavit at paragraphs 2-4 show that the patients recovered completely in a matter of hours or days. *See*, *e.g.*, Martinelli, et al. (Att. 69) (despite temporary loss of consciousness, patient fully recovered; matter described as "benign"); Naish (1945) (Att. 71) (within 24 hours, patient was "perfectly fit"). These studies are consistent with TCE's value as an anaesthetic, which Dr. Feldman admitted.

186. Dr. Feldman has not cited any scientific or medical literature justifying departure from the fundamental tenet of toxicology that the dose makes the poison. *See* Group Aff. at paras. 80-81.

4. *Dr. George Rodgers*

187. Most of the alleged complaints that Dr. Rodgers categorized as "probably" related to alleged TCE exposure were symptoms such as headaches, numbness and tingling, anxiety or nervousness, weakness or fatigue, arm or leg pains or cramps, and palpitations. These are symptoms that neither plaintiffs' experts nor the independent medical examiners could objectively measure.

188. Dr. Rodgers conceded that if he submitted a report containing his conclusions on causation to a respected medical journal, the report would be rejected for lack of "objective scientific factual proof." Rodgers Dep. at 2-10-11.

189. In reviewing possible causes of a particular plaintiff's complaints other than the alleged exposure to TCE, Dr. Rodgers looked only for such alternative explanations that were both "obvious" and "highly probable." In the absence of "obvious" and "highly probable" alternative explanations, Dr. Rodgers concluded that the complaint was "probably" caused by the alleged exposure to TCE.

190. In formulating his opinions concerning medical causation, Dr. Rodgers purported to rely on a variety of studies that he brought with him to his deposition. Similarly, the Joint Affidavit, at paragraph 11, refers to a series of reports--including mere abstracts--allegedly concerning TCE.

191. Dr. Rodgers has admitted, with respect to the sources referred to above, that these sources were of limited value because (1) they did not necessarily show health effects of TCE but other substances not relevant to this case, (2) there was no way to correlate the amount of exposure to the facts of this case, and (3) many of the "results" were not statistically significant. *See* Causation Mem. at 47-49.

192. Dr. Rodgers conceded during his deposition: "[T]he problem we've got in this case is the lack of studies that are appropriate, truly appropriate, to this set of circumstances." Rodgers Dep. at 1-237 (emphasis added); *see also id.* at 1-244 (virtually all of the studies could be thrown out on the basis of possible confounding factors).

193. For example, Dr. Rodgers relied on an abstract published by Drs. Bernad and Spyker, although he admitted that (1) there was no control group, (2) there was no attempt by the authors to rule out other potential causes, (3) he did not know

whether the technique used by the authors had general acceptance in the medical community, and (4) the authors had failed to provide Dr. Rodgers with additional information that he had requested concerning the study. Rodgers Dep. at 1-92-93. Without addressing these points, the Joint Affidavit continues to rely on the abstract.

194. Dr. Rodgers conceded that it "may be" speculative to rely on studies which "are not comparable [to this case] in their characteristics with respect to levels of exposure and [routes] of exposure . . . and other chemicals involved." *Id.* at 1-238.

195. The other studies on which Dr. Rodgers relies all have comparable or identical problems. He relies upon a study by Lillis, et al., for a connection between TCE and headaches, but the study was not controlled with respect to headaches. Rodgers Dep. at 2-207. He relies upon a study by El Ghawabi with respect to headaches, but there was no statistical analysis demonstrating that the results were meaningful. *Id.* at 2-208. He relies upon a study by Grandjean, but, again, the study was not controlled. *Id.* at 2-209. *See also id.* at 3-74-75 (Lillis and Bernad studies not controlled), 3-102 (Byers study not controlled), 3-136-38 (Logue study confounded by presence of other chemicals).

196. Dr. Rodgers did not rule out the following possible causes of Phyllis Carroll's alleged leg cramps: trauma, gout, arthritis, fever, strain, unusual amount of exercise, salt imbalance, phlebitis, and effects of birth control medication. *Id.* at 2-132-34, 2-137-38.

197. Dr. Rodgers did not rule out the possibility that Keith Gentle's alleged muscle cramps were caused by exertion at work. *Id.* at 2-153.

198. Dr. Rodgers did not rule out the possibility that Martha Carroll's complaint of forgetfulness was merely an

effect of aging (*id.* at 2-173) or that Barbara Messer's alleged tremors were a side effect of Valium (*id.* at 2-175-76).

199. Dr. Rodgers admitted that Fred Chambers' skin rash was not related to TCE, but was most likely a form of contact dermatitis. *Id.* at 3-139-41.

200. Similarly, Dr. Rodgers was unable to rule out the possibility that plaintiffs' headaches and skin rashes came from exposure to formaldehyde from various household sources (Rodgers Dep. at 1-161-62, 1-165-66) or from other sources of indoor air pollution such as cigarette smoke (*id.* at 2-41-42). Nor could he rule out exertion and anxiety as causes of alleged palpitations (*id.* at 3-105-06), obesity as a cause of Debbie Chambers' alleged fatigue (*id.* at 3-71), hormone imbalance as a cause of Martha Carroll's alleged fatigue and weakness (*id.* at 3-52), overwork as a cause of Scott Gentle's alleged fatigue (*id.* at 3-48), and medications as a cause of Barbara Messer's alleged fatigue (*id.* at 3-51). Nor could he rule out tension, carbon monoxide exposure, eyestrain, birth control pills, and menstruation as causes of headaches. *Id.* at 2-211-212, 2-214-16. Nor could he rule out Valium therapy as an explanation for Barbara Messer's alleged tremors. *Id.* at 2-175-76. Nor could he rule out strain, exertion, salt imbalance, and phlebitis as possible causes for Phyllis Carroll's alleged leg cramps. *Id.* at 2-135. Finally, Dr. Rodgers could not rule out the possibility that plaintiffs' symptoms were caused by "mass psychogenic illness" provoked by their own counsel. *Id.* at 2-227-28.

201. Dr. Rodgers conceded that most of the vague neurological symptoms claimed by plaintiffs could also have been caused by anxiety (*id.* at 2-185-86), somatizing disorders (*id.* at 2-189), or other types of emotional stress (*id.* at 2-191). As he stated:

> If you look at this group of patients and you look at the symptoms that I am attributing as Probably Re-

> lated [sic] to TCE, most of those symptoms could, in fact, be consistent with a somatic disorder. . . .
>
> . . . I will stipulate to you that the soft neurologic signs--signs like headache and anxiety, probably palpitations--are things that would be not inconsistent with a somatic disorder, of people who have those [symptoms] listed as probables. At least that component of that list, somatic disorder would be considered as an alternative diagnosis.

Id. at 2-192-93.

202. Dr. Rodgers expressed the view that it was not necessary for him to rule out other potential causes of plaintiffs' complaints to opine on medical causation. *Id.* at 2-199-200.

203. Dr. Rodgers stated at his deposition that he would attribute causation to TCE even if the likelihood of other causes being responsible exceeded the likelihood of TCE being responsible. *Id.* at 2-163.

204. Litton has asserted, and plaintiffs have not attempted to dispute, that epidemiology is "[t]he study of the distribution and determinants of health-related states and events in populations. . . ." Last, J., *A Dictionary of Epidemiology* (Oxford Medical Publications 1983) at 32-33.

205. Litton has asserted, and plaintiffs have not attempted to dispute, that among the fundamental tenets of epidemiology that must be satisfied before an agent can be deemed the cause of an effect are the following:

> 1. Prevalence of the disease should be significantly higher in those exposed to the hypothesized cause than in controls not so exposed.

* * * *

3. Incidence of the disease should be significantly higher in those exposed to the hypothesized cause than in those not so exposed, as shown by prospective studies.

* * * *

10. All of the relationships and findings should make biological and epidemiologic sense.

A Dictionary of Epidemiology at 34. *See also* Lilienfeld, A. and Lilienfeld, D., *Foundations of Epidemiology* (Oxford University Press 1980) at 317-18 (Attachment 38).

206. Dr. Rodgers conceded that he had not referred to any text on epidemiology in his work on this case. Rodgers Dep. at 1-66.

207. Dr. Rodgers admitted that there were no good epidemiologic studies showing that TCE, at the alleged concentrations, is capable of causing the problems of which plaintiffs complain. Rodgers Dep. at 1-180-81.

208. Dr. Rodgers decided to disregard the lack of epidemiologic evidence in reaching his conclusions because he took the view that such evidence was "not . . . necessary." *Id.* at 1-176-77.

209. In support of his opinions on medical causation, Dr. Rodgers set forth in his affidavit a so-called "correlation" between plaintiffs' alleged exposure and alleged health problems.

210. In this purported correlation Dr. Rodgers' failed (1) to compare plaintiffs to a control group, (2) to control for confounding factors, (3) to weight symptoms on the basis of frequency and severity, (4) to establish plausible biological mechanisms, (5) to conduct the study in a "blind" fashion, (6)

to determine statistical significance, if any, or (7) to list alleged exposures consistent with his own calculations.

211. In his deposition, Dr. Rodgers admitted that such correlations are inferior methods of determining causal relationships and that he could not find justification for his approach in any scientific text. Rodgers Dep. at 1-246, 2-91.

212. In addition to relying upon the opinions of Mr. Moore (about when chemicals first allegedly reached plaintiffs' wells) and Dr. Spencer (about the level of chemicals allegedly existing in plaintiffs' wells from 1970 to 1987), Dr. Rodgers made his own calculations for the purpose of determining the total amount of TCE to which plaintiffs allegedly were exposed. Thus, working from Dr. Spencer's figures, which provided alleged TCE levels in plaintiffs' well water, Dr. Rodgers attempted to calculate the amount of TCE that would enter each plaintiff's body through ingestion, inhalation, and dermal exposure.

213. Dr. Rodgers conceded in his deposition that many of the assumptions he made in the course of his exposure assessment were not accurate or were based on no data.[17]

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[17] For example, Dr. Rodgers assumed that plaintiffs consumed, on average, 1.6 liters of water per day. *See* Exposure Data Analysis (Attachment 34) at A-3. He admitted, however, that he had no data to substantiate that estimate. Rodgers Dep. at 1-265-66. Indeed, the estimate exceeds by more than a factor of 10 experimentally derived values set forth in the very paper upon which Dr. Rodgers relied. *See* Andelman, *Inhalation Exposure in the Home to Volatile Organic Contaminants of Drinking Water*, 47 The Science of the Total Environment 443 (1985), at 445 (Attachment 36).

Dr. Rodgers also assumed that the plaintiffs who lived near the plant consumed *all* of their fluid intake, every day, in their homes, even though he recognized that many of them worked and spent a good deal of time away from home. *Id.* at 1-266-67. At the same time, he assumed that other plaintiffs who merely *visited* homes near the plant *did* consume water during those visits, *i.e.*, that people *did* in fact drink when they were away from their own homes. Dr. Rodgers admitted that those assumptions were mutually inconsistent and required revision of his exposure assessment. *Id.* at 1-268-69.

214. Dr. Rodgers assumed that almost 90 percent of plaintiffs' alleged exposures came from inhalation of TCE inside their homes. In making these calculations, Dr. Rodgers' used a formula presented in an article by Dr. Julian Andelman for the maximum amount of TCE that could possibly exist in the air of a theoretical home having a given concentration of TCE in its water supply. Rodgers Dep. at 1-272. Dr. Andelman's article specifically warns that the formula should not be used for the purpose of making actual exposure assessments. *See* Andelman (Attachment 36) at 454 ("[o]ne should be cautious . . . in using these ratios as more than an example of the possible relative exposures that can occur via the drinking water and air inhalation routes").

215. Experimental data provided in the article itself disproved the assumption implicit in the theoretical formula, *i.e.*, that *all* of the TCE present in the water volatilizes and enters the air inside a house. *See id.* at 455. Dr. Rodgers conceded that his assumption of complete volatilization was contradicted by the empirical data set forth in Dr. Andelman's paper. Rodgers Dep. at 1-280-81.

216. Litton submitted an affidavit to this court from Dr. Andelman to the effect that Dr. Rodgers' use of the formula in the 1985 paper is inappropriate for any exposure assessment and is likely to overestimate exposure by at least a factor of 10.

Dr. Rodgers further assumed that the plaintiffs breathed at the same rate when they were at home as when they were at work. However, he admitted that assumption was probably in error as well. *Id.* at 1-269-71.

Finally, Dr. Rodgers assumed that all of the TCE in the air that a person breathes passes into the body through the lungs. In fact, according to Dr. Rodgers, only 40-75 percent passes into the body. *Id.* at 1-283-84. (According to the EPA TCE Health Advisory, at 7, the figure is 30 percent.) Again, Dr. Rodgers conceded the error. *Id.* Typical of Dr. Rodgers' approach, he explained that "at the time I did these calculations, I had not obtained any papers on [the] . . . values in the literature, and I chose to assume high." *Id.* at 1-283.

217. Dr. Rodgers admitted at his deposition that he was "not an environmental engineer," and could not understand the derivation of Dr. Andelman's theoretical formula. Rodgers Dep. at 1-270.

5. *Plaintiffs' Experts' Joint Affidavit*

218. Plaintiffs submitted a Joint Affidavit from Drs. Broughton, Feldman, and Rodgers in support of their opposition to Litton's Motion on Causation. The Joint Affidavit cited a number of studies purporting to support plaintiffs' medical causation opinions. In particular, Paragraph 13 of the Joint Affidavit specifically cited six items.

219. The studies cited in the Joint Affidavit do not support the opinions that plaintiffs' experts seek to provide in this case. (Copies of these studies were provided to the undersigned, not by plaintiffs or their experts, but by Litton.) For example, in Logue, J. et al. (miscited by plaintiffs as "Logi"), the authors concluded:

> [C]omparisons of the exposed and control group *failed to demonstrate any significant findings* [and that] . . . the data appear to indicate that there were *no observable long-term health effects which could be ascribed to long-term, low-level exposure to TCE* or other volatile organic compounds. . . . In summary, the present study does not reveal an excess prevalence of any serious chronic health condition among individuals who were exposed to volatile organic compounds.

Logue, J. et al. at 158-60 (emphasis added). The other studies are equally unsupportive of plaintiffs' position. Clark, et al., which the Joint Affidavit describes as relating to TCE, has nothing to do with TCE, but *did* involve a variety of other chemicals (benzene, chlordane, hexachlorobutadiene, hexachloroethane, hexachlorobicycloheptadiene, naphthalene,

toluene, and xylenes) *not* found in plaintiffs' wells. *See* Clark, et al. at 11. Both Liu, et al. (Joint Affidavit cites as "Lui"), and Lilis, et al. (Joint Affidavit cites as "Liles"), involve *industrial* exposures to TCE. As plaintiffs' experts concede, however, such exposures are frequently accompanied by exposure to a breakdown product of TCE, *i.e.*, dichloroacetylene, which *could not* have been present in plaintiffs' water or homes. *See* Group Aff. at paras. 141-51; Rodgers Dep. at 1-240-42. Since plaintiffs do not take issue with Litton's analysis, the court must reject any reliance on industrial studies such as Liu, et al., and Lilis, et al. Byers, et al., as Litton pointed out (and plaintiffs have not denied) is fundamentally flawed because the researchers did not choose an appropriate control group, nor did they consider and exclude the possibility of numerous confounding factors. *See* Group Aff. at paras. 122-24. In Feldman, et al., there was no clinical difference between the group of allegedly exposed individuals and the general population.

D. Findings Relating to Alleged Increased Risk of Disease

220. The undersigned incorporates herein its recommended Findings of Fact as set forth in paragraphs 1-219 above.

221. Plaintiffs concede that they are unable to demonstrate that any alleged future risk is more likely than not to materialize.

222. Dr. Rodgers testified: "I think it's unlikely that these people will develop additional problems beyond what currently exists." His effort to establish the likelihood of any plaintiff contracting cancer from the alleged exposures showed that, *at most*, no plaintiff has greater than a four-in-one thousand chance, *i.e.*, 0.4 percent, and half of the plaintiffs, by his calculations, have no greater than a three-in-one hundred thousand chance, *i.e.*, 0.003 percent.

223. By comparison, the average risk of obtaining cancer in the United States, according to Dr. Rodgers, is one in four, or 25 percent.

224. Dr. Feldman testified that, in his view, plaintiffs were recovering from some alleged disease process. Feldman Aff. at para. 17.

225. Dr. Broughton has stated: "I cannot say . . . to a reasonable degree of medical certainty that any one of these plaintiffs will most probably develop any one of these diseases" including cancer. Broughton Affidavit at para. 13.

E. Findings Relating to Alleged Emotional Distress

226. The undersigned incorporates herein its recommended Findings of Fact as set forth in Paragraphs 1-225 above.

227. Plaintiffs have failed to adduce any expert testimony to the effect that alleged emotional distress suffered as a result of their having discovered the presence of chemicals in their drinking water caused any of them to suffer physical harm or that any plaintiffs, as a result of their alleged exposures, suffer from a serious and disabling mental or emotional disorder that is generally recognized and diagnosed by trained professionals.

228. Dr. Engum, the only expert witness identified by plaintiffs to render an opinion concerning plaintiffs' psychological status, could not express any opinions concerning a causal relationship between plaintiffs' alleged exposure to TCE and his purported findings.

229. The Group Affidavit submitted by Litton stated, *inter alia*, that "the mental distress claimed to arise from fear of physical illness is not caused by TCE exposure. It appears to be generated and maintained by false beliefs, group processes (such as conformity) and/or by personal investment in the litigation process." Group Aff. at para. 186. Plaintiffs offered no expert testimony to rebut this statement.

230. Plaintiffs conceded in their memorandum in opposition to Litton's motion on emotional distress (at 11) that, with two exceptions, the emotional distress claimed by plaintiffs "has

not reached pathological levels." As to the two alleged exceptions--James Carroll, Sr., and Fred Allen Chambers--plaintiffs point to testimony of Dr. Robert Byron. Dr. Byron was not named by plaintiffs as an expert witness in their filings pursuant to the court's scheduling orders. Dr. Byron also provided conflicting testimony as to his assessment of these plaintiffs, including execution of a sworn affidavit to the effect that, as a result of restrictions on his interviews imposed by plaintiffs' counsel, he was "unable to conduct a full and complete psychiatric examination" and was therefore "unable to confirm the diagnoses of any of the plaintiffs whom I examined." Dr. Byron Aff. (Att. 57).

231. Virtually every time a plaintiff was asked during deposition whether he or she claimed that an alleged health complaint was related to the alleged ingestion of the chemicals in issue, the plaintiff contended that he or she "wasn't an expert" and refused to rule out *any* potential claim of causal connection to *any* of a myriad of subjective complaints, including everything from sties to hemorrhoids to withdrawal symptoms. *See, e.g.*, Deposition of Belinda Gaddis (Attachment 7) at 109-15 (believes that nervousness, mood changes, bumps on her skin, sore throats, viruses, colds and influenza, among other things, were or may have been caused by exposure to the chemicals at issue); Deposition of Martha Carroll (Attachment 5) at 83-90, 136 (believes that pain in her arms, itching in her feet, headaches, hives, stomach and bowel problems--including both diarrhea *and* constipation--colds, sore throats, among other things, were or may have been caused by the alleged exposure); Deposition of Rosetta Rogers (Attachment 14) at 82-86 (believes that menstrual cramps, vaginal infections, low blood iron, and heart murmur were or may have been caused by the alleged exposure). Indeed, one of the plaintiffs contended that she suffered "withdrawal symptoms" when bottled water was supplied to her home as a precaution. *See* Deposition of Barbara Messer (Attachment 13) at 167-68.

232. Plaintiffs who use tobacco include Martha Carroll, James Carroll, Jr., Fred Chambers, Walter Randy Gaddis, Kenny Green, Peggy Green, Sandra Hancock, James Messer and Melanie Messer. *See* Shields Aff., paras. 25(h), 26(d), 30(d), 35(g), 41(e), 38(d), 39(c), 43(e), 44(d). Use of tobacco is a habit for which human epidemiological evidence proves a causal relationship to cancer. *See* Shields Aff., paras. 25-48.

233. Plaintiff Barbara Messer asked Dr. Robert Stahlkuppe, who treated a number of plaintiffs, to write several letters on her behalf to the effect that Mrs. Messer should no longer be required to drink the water at her house. Dr. Stahlkuppe testified that he attempted to accommodate Mrs. Messer in providing letters but that he had not, and still has not, concluded that any of her alleged symptoms were caused by TCE. Deposition of Dr. Robert Stahlkuppe (Attachment 24) at 35-36. At the time Barbara Messer asked Dr. Stahlkuppe to write these letters on her behalf, she disregarded a letter from another of her treaters, Dr. Robert Kibler at Emory University, who had concluded that her symptoms "could not possibly be related to exposure to trichloroethylene." (Attachment 54). Deposition of Dr. Robert Stahlkuppe at 33-36 (Attachment 24).

F. Findings of Fact on Nuisance and Trespass

234. The undersigned incorporates herein its recommended Findings of Fact as set forth in Paragraphs 1-233 above.

235. Plaintiffs have submitted no expert testimony on behalf of their assertion that some or all of the plaintiffs have been prevented from swimming or fishing in Slow Creek as a result of the alleged presence of chemicals.

236. Fourteen plaintiffs now concede that they do not have *any* trespass claim because they do "not have a property interest . . ." Pl. Mem. at 11. Thus, the following are admittedly precluded from pursuing trespass claims: James Carroll, Jr., Phyllis Ann Carroll, Rusty Chambers, Derrick Gaddis, Justin Gaddis,

Keith S. Gentle, James Messer, Charles Hancock, Jr., Sandra Hancock, Jonathan Messer, Melanie Messer, Edwina Rogers, Ancy Wimpey, and Jennifer Wimpey.

237. The chemicals found in plaintiffs' wells are not unique to Litton. For example, a 1987 study by the United States Environmental Protection Agency found that many commonly used household products contain the chemicals at issue in this lawsuit. *See* Office of Pesticides and Toxic Substances, United States Environmental Protection Agency, "Household Solvent Products: A 'Shelf' Survey With Laboratory Analysis" at x-xii, 4-1-29 (1987) (Attachment 42).

238. The chemicals at issue in this case are ubiquitous in the environment. They occur in the air, in foodstuffs and in household products in concentrations as great and even greater than those in which they were found in plaintiffs' wells. The Health Advisories put out by the United States Environmental Protection Agency's Office of Drinking Water (Attachment 41) report the following:

> *Trichloroethylene* -- Production of TCE was 200 million lbs in 1982. . . . [T]he majority of all TCE production is released to the environment. . . . Because metal working operations are performed nationwide, TCE releases occur in all industrialized areas. . . . Because of the large and dispersed releases, *TCE occurs widely in the environment. Trichloroethylene is ubiquitous in the air with levels in the ppt to ppb range. . . . Trichloroethylene has been reported to occur in some foods in the ppm range.*
>
> *1,1,1-Trichloroethane* -- Production of 1,1,1trichloroethane was 600 million lbs in 1982. . . . Since 1,1,1-trichloroethane is not consumed during degreasing operations, the majority of all 1,1,1-trichloroethane production is released to the environment. . . . *Because of the large and dispersed*

releases. 1,1,1-trichloroethane occurs widely in the environment. 1,1,1-Trichloroethane is ubiquitous in the air with levels in the low ppb range. . . . 1,1,1-Trichloroethane has been reported to occur in some foods in the ppb range . . . .

Tetrachloroethylene -- 550 million pounds were produced in 1982, most of which was released into the atmosphere. It is "*ubiquitous in the air with levels in the ppt to ppb range . . . . Tetrachloroethylene has been reported to occur in some foods in the ppm range . . . .*"

1,2-Dichloroethane -- "Production of dichloroethane was approximately 12 billion pounds in 1983. . . . Because metal working operations are performed nationwide, dichloroethane releases occur in all industrialized areas." Three percent of all surface water supplies in the country have concentrations between 0.5 and 20 ppb. "For a majority of the U.S. population, the greatest source of dichloroethane exposure is from air. *Drinking water is the greatest source only for populations with drinking water levels greater than 6 [ppb].*"

1,1-Dichloroethylene -- Approximately 200 million pounds of 1,1-DCE were produced in 1980. . . . Levels in the ppb range have been reported in the areas where 1,1-DCE and its polymers are manufactured.

Health Advisory for TCE (at 3); 1,1,1-trichloroethane (at 2-3); tetrachloroethylene (at 3); 1,2-dichloroethane (at 3); 1,1dichloroethylene (at 3) (emphasis added) (Attachment 41). Plaintiffs have failed to submit any information contrary to that cited above from the EPA Health Advisories.

239. The Group Affidavit states, *inter alia*, that

> the ubiquitous presence of TCE and other chlorinated solvents in chlorinated drinking water and in the atmosphere makes exposure to them inescapable. We are all exposed daily to concentrations of these compounds in the water we drink and in ambient air. . . . [C]omparison of plaintiffs' estimated exposures with those that might be expected from ambient air reveals that the amount of TCE from these two sources is within the same range.

Group Aff., para. 28. Plaintiffs have not submitted any information contrary to that portion of the Group Affidavit quoted herein.

G. Findings of Fact on CERCLA Claims

240. The undersigned incorporates herein its recommended Findings of Fact as set forth in Paragraphs 1-239 above.

241. Plaintiffs seek reimbursement for alleged expenditures in response to the alleged release of hazardous substances from the plant.

242. Among the activities for which plaintiffs seek recovery of response costs are: medical costs, including the costs they incurred by visiting and/or consulting with the expert witnesses they designated in this litigation, *e.g.*, Drs. Feldman, Broughton, and Rodgers; sampling and analytical costs; alternative water supplies, *i.e.*, alleged costs of obtaining water from neighbors after the discovery of the chemicals in plaintiffs' water supplies; and attorneys' fees.

243. Litton has alleged, and plaintiffs have not submitted any evidence in rebuttal, that (a) some of the response costs sought under their CERCLA claims were expended on behalf of the Conleys, who have been dismissed from this case, and (b) some of the response costs sought under their CERCLA claims have been submitted to their insurance carriers for payment.

244. Plaintiffs' CERCLA claim for alternative water supply costs seeks only mileage costs for driving to their relatives' houses and, as part of such visits, obtaining bottled water. Plaintiffs' Response to Second Set of Interrogatories, at para. 5(c) (Exhibit F).

245. Plaintiffs' claimed response costs began in 1988 and continue to the present. Accordingly, plaintiffs' claimed "response" activities have continued for more than six months.

246. Plaintiffs have not offered any affirmative evidence that any alleged "response costs" incurred by them as a result of the alleged release of hazardous substances from the plant were either necessary or have been incurred in compliance with the National Contingency Plan ("NCP").

H. Findings of Fact on RCRA Claims

247. The undersigned incorporates herein its recommended Findings of Fact as set forth in Paragraphs 1-246 above.

248. Following adoption of RCRA regulations in 1980, Litton applied for an interim status (or Part A) permit. *See* Complaint, para. 36. Litton operated under that permit until 1985, when it installed a new treatment system and began discharging its treated wastewater under a Clean Water Act (or NPDES) permit. *See* Deposition of Michael Hogsed, at 104-05, 131. As a result, Litton's plant no longer required a RCRA permit.

249. Plaintiffs do not allege a present or ongoing "disposal" of hazardous wastes from the plant. *See* Plaintiffs' Responses to Second Set of Interrogatories (dated September 19, 1989) (Exhibit B), at para. 1(c).

250. In the course of closing its then-existing RCRA treatment facility in 1986, Litton detected the presence of low levels of chlorinated solvents in soils and then in groundwater under the plant site. This discovery led to notification by Litton of

state and federal authorities, provision of bottled and filtered water to nearby residents, implementation of interim remedial measures of various kinds, and entry into an administrative Consent Order under RCRA with EPA. Pursuant to this Consent Order, Litton has undertaken further interim remedial measures and is performing a complete remedial investigation of the site.[18] Plaintiffs do not contend that Litton has violated this Consent Order in any way.[19]

251. On October 21, 1989, plaintiffs mailed Litton a letter which purported to give Litton notice that they intended to file suit under the citizen suit provisions of RCRA. This action was filed on October 25, 1989, four days later.

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[18] The stated purposes of the Consent Order are:

> (1) to perform Interim Measures (IM) to relieve threats to human health or the environment, (2) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of the presence of any release of hazardous wastes and constituents at or from the hazardous waste management facility in Murphy, North Carolina; and (3) to perform a Corrective Measures Study (CMS) to identify and evaluate alternatives for the corrective action necessary to prevent or mitigate any migration or releases of hazardous wastes to hazardous constituents at or from the facility.

Consent Order, at Section III.

[19] *See* Plaintiffs' Response to Second Set of Interrogatories, at para. 1(i).

SUBMISSION

IT IS, THEREFORE, RESPECTFULLY SUBMITTED that these Findings of Fact, Part I, as incorporated in the Conclusions of Law, Part II, and Memorandum and Recommendation, Part III, filed simultaneously herewith, be accepted by the district court.

The parties are hereby advised that, pursuant to 28, United States Code, Section 636(b)(1)(C), written objections to these recommended Findings of Fact, as incorporated in the Conclusions of Law, Part II, and Memorandum and Recommendation, Part III, filed simultaneously herewith, must be filed within ten (10) days of service of same. Failure to file objections to these recommended Findings of Fact with the district court will preclude the parties from raising such objections on appeal. *Thomas v. Arn*, 474 U.S. 140 (1985), *reh'g denied*, 474 U.S. 1111 (1986); *United States v. Schronce*, 727 F.2d 91 (4th Cir.), *cert. denied*, 467 U.S. 1208 (1984).

These recommended Findings of Fact, Part I, are entered in response to the motions noted *supra*.

Respectfully submitted, this, the 29th day of October, 1990.

/s/ J. Toliver Davis
J. TOLIVER DAVIS
UNITED STATES
MAGISTRATE

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
BRYSON CITY DIVISION
B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
Justin Gaddis, and Derrick Gaddis, both minors;
RANDY GADDIS, individually and as next friend and
parent of Justin Gaddis, and Derrick Gaddis, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of Chuck Hancock, a minor;
JAMES R. MESSER, individually and as next friend
and parent of Jonathan Messer, a minor;
MELANIE MESSER, individually and as next friend
and parent of Jonathan Messer; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
OCT 29, 1990
ASHEVILLE, N.C.
U.S. DISTRICT COURT
W. DISTRICT OF N.C.

CONCLUSIONS OF LAW, PART II

PURSUANT TO 28, UNITED STATES CODE, SECTION 636(b) and the standing Orders of Designation entered by United States District Judge Richard L. Voorhees, the undersigned United States Magistrate has before him a variety of dispositive motions as noted in the Recommended Findings of Fact, Part I.

Having carefully considered the motions, reviewed the pleadings, and conducted a hearing, the undersigned magistrate respectfully submits the following recommended Conclusions of Law, Part II. These recommended Conclusions of Law are released in conjunction with, and as part of, the undersigned's Findings of Fact, Part I, and Memorandum and Recommendation, Part III.

CONCLUSIONS OF LAW

A. Conclusions of Law on Plaintiffs' Motion to Strike

1. As a preliminary matter, the undersigned must address plaintiffs' Motion to Strike From the Record Materials Submitted by the Defendant, Etc. The motion goes to the affidavits of Dr. Julian Andelman and Dr. Paul Roberts, cited above; to certain references to medical or scientific literature "not discussed by any of defendant's experts"; and to "[a]ll copies of medical or scientific articles that were submitted as attachments to defendants' motions." Motion at 1. As support for this motion, plaintiffs assert (1) that the submission of the noted affidavits is in violation of the undersigned's pretrial orders requiring Litton to name, not later than March 15, 1990, its expert witnesses, and (2) that the submission of the noted citations and articles violates Federal Rule of Evidence 803 (18)--the hearsay exception for learned treatises.

2. First, the undersigned concludes that submission by Litton of two affidavits does not contravene the pretrial order

with regard to the naming of expert witnesses. The pretrial order relates solely to the identity of witnesses expected to testify at trial, if any. Litton has submitted the affidavits of Drs. Andelman and Roberts, not as evidence that would be submitted at trial, but as information relevant to the court's pretrial determination, pursuant to Federal Rule of Evidence 104(a), which provides as follows:

> Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.

Nothing in the pretrial order limits a party in the nature of information that can be submitted to the court for the purpose of making Rule 104(a) pretrial determinations concerning competence of witnesses and admissibility of testimony. Since the affidavits submitted by Litton from Drs. Roberts and Andelman go directly to the competence of Drs. Spencer and Rodgers, respectively, to testify and to the admissibility of their opinions, they do not run afoul of the pretrial orders.

3. Similarly, to the extent that the other citations and attached articles go to the admissibility of the expert opinions offered by plaintiffs, the fact that they might technically be considered hearsay does not preclude the court from considering them. Federal Rules of Evidence 104(a), 1101(d)(1) (rules of evidence other than privilege inapplicable to Rule 104 determinations); *Bourjaily v. United States*, 483 U.S. 171, 177-78 (1987).

4. In any event, plaintiffs have not shown that these citations or articles are hearsay in light of the exception to the hearsay rule provided by Rule 803(18). Rule 803(18) establishes an exception to the hearsay rule with respect to:

> *Learned Treatises.* To the extent called to the attention of an expert witness upon cross-examination or relied upon by him in direct examination, statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine, or other science or art, established as a reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice. If admitted, the statements may be read into evidence but may not be received as exhibits.

One of the articles to which plaintiffs object is the article by Dr. Andelman upon which Dr. Rodgers, plaintiffs' expert, explicitly relied. Clearly, for the purposes of this litigation, plaintiffs cannot be heard to contend that the article is not a "reliable authority." Another article to which plaintiffs object is an epidemiological study by Shindell and Ulrich, relied upon in the Group Affidavit submitted by Litton. This constitutes sufficient authority under Rule 803(18) to allow the court to consider the article. The same may be said for the citations appended to some of Litton's affidavits. Finally, Litton's citations of various epidemiological treatises does not constitute hearsay. Rather, these treatises were cited because Dr. Rodgers did not recognize them, nor did he rely upon any other epidemiological treatise, in formulating his proposed opinions. Litton submitted them to the court, not solely for the truth of the information they contained, but to illustrate the limitations of Dr. Rodgers' alleged expertise. As such, the citations are not hearsay and may be considered by the court.

5. In any event, none of the Conclusions of Law set forth below are dependent upon the court's consideration of these materials. Thus, even if the district court should overrule the undersigned's determination on plaintiffs' Motion to Strike, the Conclusions of Law would remain as set forth herein.

B. Conclusions of Law Generally Concerning Review of Proposed Expert Testimony

1. In a federal diversity action, the sufficiency of evidence to create a jury question is a matter governed by federal law. *Fitzgerald v. Manning*, 679 F.2d 341, 346 (4th Cir. 1982); *Bryan v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 565 F.2d at 281.

2. Rule 104(a) of the Federal Rules of Evidence requires a court to make a preliminary inquiry into the admissibility of expert testimony. *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1239.

3. A district court has wide discretion in determining whether to admit or exclude expert testimony. *Hamling v. United States*, 418 U.S. 87, 108 (1974).

4. Plaintiffs suggest that, so long as their experts say the magic words, *e.g.*, "to a reasonable degree of scientific or medical certainty," the court must accept that testimony under the Federal Rules of Evidence. This suggestion is wrong, as the analysis set forth herein demonstrates. In arriving at its recommended conclusions in this case, however, the undersigned has not weighed the conflicting evidence presented by each side against the other's. Rather, the undersigned has determined that the admissible evidence offered by plaintiffs' experts does not satisfy plaintiffs' burden of establishing a genuine issue of material fact sufficient to withstand summary judgment.

5. Not every opinion offered by a so-called expert is automatically admitted into evidence. Rather, an expert's opinion will be allowed into evidence only if it is of genuine assistance to the trier of fact and the scientific methods the expert uses are generally accepted in the relevant scientific community. *See, e.g., Sterling v. Velsicol Chemical Corp.*, 855 F.2d at 1207-09 (excluding testimony of experts based upon pseudo-scientific principles of "clinical ecology"); *Hull v. Merck & Co.*,

758 F.2d at 1477 (trial court correctly excluded medical causation testimony because expert's "assumptions . . . rendered his seemingly firm opinion quite speculative"); *United States v. MacDonald*, 485 F. Supp. at 1096 (excluding evidence of psychiatrist concerning defendant's ability to form mental state).

6. The Court of Appeals for the Fourth Circuit has stated:

> There are good reasons why not every ostensibly scientific technique should be recognized as the basis for expert testimony. Because of its apparent objectivity, an opinion that claims a scientific basis is apt to carry undue weight with the trier of fact.

United States v. Baller, 519 F.2d at 466 (4th Cir.); *see Viterbo v. Dow Chemical Co.*, 826 F.2d at 424 ("without more than credentials and a subjective opinion, an expert's testimony that 'it is so' is not admissible").[1]

7. To guard against a jury giving undue weight to an expert opinion, the Federal Rules of Evidence require the court to evaluate proffered expert testimony under Rules 702, 703, and 401-03. Such evaluation ensures that the expert's opinions are sufficiently reliable to be heard by the jury. *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1243.

8. Rule 702 permits testimony by expert witnesses only when "scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or determine a

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[1] *See also United States v. Addison*, 498 F.2d at 744 ("scientific proof in some cases may assume a posture of mystic infallibility in the eyes of a jury of laymen"); *United States v. MacDonald*, 485 F. Supp. at 1096 (because the opinion of an expert may carry undue weight, not every ostensibly scientific technique should be recognized as the basis of expert testimony). A commentator has noted that "a Ph.D. can be found to swear to almost any 'expert' proposition, no matter how false or foolish." Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 Colum. L. Rev. 277, 333 (1985).

fact in issue." Rule 703 requires that the facts or data upon which the expert relies be "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject . . . ." Finally, Rule 403 authorizes the court to exclude otherwise relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of issues, or misleading the jury . . . ."

9. The Federal Rules of Evidence require the exclusion of expert testimony which is merely speculative because it does not "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. *See Garwood v. International Paper Co.*, 666 F.2d at 223 (court excluded the testimony of "human factors engineer" because it was not helpful or of assistance); *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1243 (helpfulness criteria considered under Rule 702).

10. "Expert testimony may not be received unless it appears that the witness is in possession of such facts as would enable him to express a reasonably accurate conclusion as distinguished from a mere guess or conjecture." *Gilbert v. Gulf Oil Corp.*, 175 F.2d 705, 709 (4th Cir. 1949); *see Horton v. W. T. Grant Co.*, 537 F.2d 1215, 1218 (4th Cir. 1976) (expert testimony is inadmissible absent a "reasonably accurate conclusion").[2] When an expert's testimony is merely a guess or speculation and lacks reasonable factual basis, the court should

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[2] *See also Jastremski v. United States*, 737 F.2d 666, 671 (7th Cir. 1984) (an expert "must signify a probability supported by some rational basis; mere possibilities will not suffice"); *Wratchford v. S. J. Groves & Sons Co.*, 405 F.2d at 1066 ("somewhere lines must be drawn by a federal judge, for if the inference sought to be drawn lacks substantial probability, any attempted resolution of the question may well lie within the area of surmise and conjecture"); *Ralston Purina Co. v. Edmunds*, 241 F.2d at 168 ("the jury may not be permitted to guess between competing possibilities"); *Lanza v. Poretti*, 537 F. Supp. 777, 785 (E.D. Pa. 1982) (testimony based on possibilities held speculative, conjectural and, therefore, inadmissible).

exclude it. *United States v. 0.161 Acres of Land*, 837 F.2d 1036, 1040 (11th Cir. 1988).[3]

11. The court is not required to accept into evidence all testimony proffered as expert. Instead, the court must make its own searching inquiry to determine whether the proffered testimony would be of genuine assistance to the trier of fact.[4] The scientific theories, principles, and methodology utilized by an expert must be generally accepted in the relevant scientific/medical community.[5] In addition, the expert opinion, to

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[3] *See In re Air Crash Disaster at New Orleans*, 795 F.2d 1230, 1234-35 (5th Cir. 1986) (loss of inheritance testimony too speculative); *Marks v. Pan American World Airways, Inc.*, 785 F.2d 539, 542 (5th Cir. 1986) (damage award cannot stand when the only evidence to support it is speculative or purely conjectural); *Shu-Tao Lin v. McDonnell Douglas Corp.*, 742 F.2d 45, 49 (2d Cir. 1984) (future income projections extravagant and non-probative); *Jones v. Goodlove*, 334 F.2d 90, 94 (8th Cir. 1964) (court is not permitted to abuse its discretion by allowing a seemingly qualified expert witness to exceed permissible bounds of opinion testimony and enter into the realm of utter speculation and conjecture); *American Bearing Co. v. Litton Indus., Inc.*, 540 F. Supp. 1163, 1171-75 (E.D. Pa. 1982), *later app.*, 729 F.2d 943 (3d Cir. 1984) *cert. denied*, 469 U.S. 854 (1984).

[4] As Judge Weinstein has noted, "[a]n expert can be found to testify to the truth of almost any factual theory, no matter how frivolous." Weinstein, *Improving Expert Testimony*, 20 U. Rich. L. Rev. 473, 482 (1986). *See also* Graham, *Expert Witness Testimony and the Federal Rules of Evidence: Insuring Adequate Assurance of Trustworthiness*, 1986 U. Ill. L. Rev. 43, 45 ("[t]oday practicing lawyers can locate quickly and easily an expert witness to advocate nearly anything the lawyers desire").

[5] *See also Ackerson v. Dow Chemical Corp.*, Nos. 808161, 818398, 830603, 810701, 837362, and 862021, California Superior Court, San Francisco, April 4, 1989, slip. op. at 5 (Attachment 43):

> The threshold screening by the Court sitting at the frontier of an ever-expanding legal plane of toxic chemical litigation will insure that the traditional role of the jury is preserved for reliable complaints while sparing the expenditure of massive public and private resources for resolving claims which do not pass scientific muster.

be admissible, must rest on an adequate foundation.[6] The expert must have more than just his credentials and his "subjective opinion." *See Viterbo v. Dow Chemical Co.*, 826 F.2d at 424; *Rohrbough v. Wyeth Laboratories, Inc.*, 719 F. Supp. at 475-76 (N.D. W. Va. 1989).

12. The court must be vigilant against the possibility that a jury could be swayed by an expert simply because of his credentials and the scientific nature of his opinions. *See United States v. Baller*, 519 F.2d at 466-67 ("[b]ecause of its apparent objectivity, an opinion that claims a scientific basis is apt to carry undue weight with the trier of fact"); *Mid-State Fertilizer Co. v. Exchange National Bank*, 877 F.2d 1333 (7th Cir. 1989) (affirming summary judgment to defendant based upon ruling that expert's affidavit did not raise sufficient factual issues, notwithstanding expert's substantial qualifications and review of the facts); *Merit Motors, Inc. v. Chrysler Corp.*, 569 F.2d 666, 673 (D.C. Cir. 1977) ("[t]o hold that Rule 703 prevents a court from granting summary judgment against a party who relies solely on an expert's opinion that has no more basis in or out of the record than [this expert's] theoretical speculations would seriously undermine the policies of Rule 56"); *Brueggemeyer v. American Broadcasting Cos.*, 684 F. Supp. 452, 465 n.15 (N.D. Tex. 1988) (court is obligated to determine whether expert's proposed testimony lacks sufficient foundation, "rather than simply permit the jury to consider all expert testimony and give it appropriate weight").[7]

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[6] *See Rohrbough v. Wyeth Laboratories, Inc.*, 719 F. Supp. 470, 474 (N.D.W. Va. 1989) ("an expert opinion, submitted in opposition to a summary judgment motion, may be disregarded if it is not supported by facts"); *United States v. Certain Land*, 214 F. Supp. at 151 (if the assumptions upon which an expert opinion is based are not true, the opinion is worthless).

[7] *See, e.g., Anderson v. Liberty Lobby, Inc., supra* ("[t]he mere existence of a scintilla of evidence in support of the plaintiff's position will be insufficient; there must be evidence on which the jury could *reasonably* find for the plaintiff") (emphasis added); *Wratchford v. S. J. Groves & Sons Co.*,

13. "Though courts have afforded experts a wide latitude in picking and choosing the sources on which to base opinion, Rule 703 nonetheless requires courts to examine the reliability of those sources." *Soden v. Freightliner Corp.*, 714 F.2d 498, 505 (5th Cir. 1983). *See also Logsdon v. Baker*, 517 F.2d 174, 175 (D.C. Cir. 1975) (opinion based upon insufficient foundation would be excluded).

14. The court's inquiry should not stop merely because plaintiffs attempt to characterize the situation as a "battle of the experts." There need be no battle, and no trial, if the court concludes that the *admissible* opinions of plaintiffs' experts would not allow a reasonable jury to find for plaintiffs on the issue of medical causation. *See, e.g., United States v. 294 Various Gambling Devices*, 718 F. Supp. 1236, 1241 (W.D. Pa. 1989) (summary judgment granted notwithstanding assertion by nonmovant that court was faced with classic "battle of the experts").

15. Novel scientific evidence must be excluded as speculative unless its proponent can show that the scientific methods employed "have gained general acceptance" in the relevant scientific community.[8] *Frye v. United States*, 293 F. 1013,

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405 F.2d at 1066 (4th Cir. 1969) ("somewhere lines must be drawn by a federal judge, for if the inference sought to be drawn lacks substantial probability, any attempted resolution of the question may well lie within the area of surmise and conjecture"); *Ford Motor Co. v. McDavid*, 259 F.2d at 266 ("[p]ermissible inferences must still be within the range of reasonable probability, however, and it is the duty of the court to withdraw the case from the jury when the necessary inference is so tenuous that it rests merely upon speculation and conjecture").

[8] *See Head v. Lithonia Corp.*, 881 F.2d 941, 944 (10th Cir. 1989) (admission of doctor's testimony based on topographical brain mapping held to be an abuse of discretion because it lacked acceptance in the scientific community); *Novak v. United States*, 865 F.2d at 723-24 (excluding expert's medical theory which was based on a speculative "experimental body of information," not accepted by the scientific community); *Hull v. Merck & Co.*, 758 F.2d at 1477-78 (medical testimony excluded for lack of scientific

1014 (D.C. Cir. 1923); *Ellis v. International Playtex, Inc.*, 745 F.2d 292, 304 n.15 (4th Cir. 1984); *see United States v. Gould*, 741 F.2d 45, 48-49 (4th Cir. 1984) ("new" scientific hypothesis must be substantially accepted in the discipline to be admissible).[9]

16. In addition, scientific testimony is not "generally accepted" unless the "scientific process is reliable, or sufficiently accurate." *United States v. Franks*, 511 F.2d 25, 33 n.12 (6th Cir.), *cert. denied*, 422 U.S. 1042 (1975).[10] In *United States*

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acceptance, expert's assumptions rendered opinion speculative); *United States v. Brady*, 595 F.2d 359, 362 (6th Cir.), *cert. denied*, 444 U.S. 862 (1979) (to be admissible, expert testimony must conform to a generally accepted explanatory theory); *United States v. Brown*, 557 F.2d 541, 556 (6th Cir. 1977) (to be admissible, the principle on which scientific evidence is based must be sufficiently established to have gained general acceptance in particular field); *United States v. Alexander*, 526 F.2d 161, 163 (8th Cir. 1975) (scientific evidence must be reliable and have gained general acceptance); *Wilkinson v. Rosenthal & Co.*, 712 F. Supp. 474 (E.D. Pa. 1989) (court excluded expert opinion based on a "novel" statistical approach when reliability of method not proven).

[9] *See also Spencer v. General Electric Co.*, 688 F. Supp. 1072, 1076 (E.D. Va. 1988), *aff'd*, 894 F.2d 651 (4th Cir. 1990) (testimony regarding rape-related psychological disorders excluded as "not a scientifically reliable means of proving that a rape occurred"); *United States v. Grant*, 473 F. Supp. 720, 723 (D.S.C. 1979).

[10] *See Wilder Enterprises, Inc. v. Allied Artists Pictures, Corp.*, 632 F.2d 1135, 1143-44 (4th Cir. 1980) (expert's testimony properly excluded under Rule 703 when no facts were presented to support his calculations nor was there any proof that underlying data was of a type reasonably relied upon by experts in the field); *Viterbo v. Dow Chemical Co.*, 826 F.2d at 424 (summary judgment granted on issue of causation because tests upon which expert relied were so unreliable and lacking in probative value that no reasonable expert would base an opinion on them); *United States v. Esle*, 743 F.2d 1465, 1474 (11th Cir. 1984) (unreasonable to rely on untrustworthy radio station market surveys); *Barrel of Fun, Inc. v. State Farm Fire & Casualty Co.*, 739 F.2d 1028, 1033 (5th Cir. 1984) (court excluded expert testimony based on the results of a voice stress analyzer because there was insufficient foundation

v. Baller, *supra*, the Fourth Circuit, citing *Frye*, held that "[t]he admissibility of [scientific evidence] turns primarily on whether this theory has been *sufficiently proved* to allow a jury to give the evidence whatever weight it sees fit . . . . There must be a *demonstrable, objective procedure* for reaching the opinion." *Id.* at 465-66 (emphasis added).

17. Although plaintiffs may take issue with the *Frye* standard, they concede that a methodology must be reasonably reliable before it can serve as the basis for an expert opinion. The conclusions of law set forth below would be the same even if the *Frye* standard were ignored and plaintiffs' more liberal standard accepted.

18. For any scientific method to be sufficiently reliable, it must be possible to validate the method by comparing its estimates to real world data. *See, e.g., Ohio v. United States Environmental Protection Agency*, 784 F.2d 224, 226 (6th Cir.), *reaff'd*, 798 F2d. 880, 881 (6th Cir. 1986) (EPA acted arbitrarily in using a model to set emission limits "without adequately validating, monitoring, or testing its reliability or its trustworthiness in forecasting pollution . . .").[11]

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establishing its trustworthiness or its acceptance in the relevant scientific community); *Soden v. Freightliner Corp.*, 714 F.2d at 503 (court excluded statistical data and opinion based on them when not shown to be of a type reasonably relied upon by experts in the field); *United States v. Cox*, 696 F.2d 1294, 1297 (11th Cir.), *cert. denied*, 464 U.S. 827 (1983) (affirming exclusion of expert testimony based on hearsay not reasonably relied upon by experts in the field); *United States v. Tranowski*, 659 F.2d 750, 756-57 (7th Cir. 1981) (trial court erred in admitting "scientific evidence" consisting of astronomer's calculations without general acceptance in the relevant scientific community).

[11] *See Cleveland Elec. Illuminating Co. v. Environmental Protection Agency*, 572 F.2d 1150, 1161 (6th Cir.), *cert. denied*, 439 U.S. 910 (1978) ("dispersion modeling requires detailed information on all factors that affect the dispersion of emissions"); *United States v. Hooker Chemical & Plastics Corp*, 607 F. Supp. 1052, 1061 (W.D.N.Y. 1985), *aff'd*, 776 F.2d 410 (2d Cir. 1985) (groundwater models must be calibrated against sufficient real world data).

19. A court should grant summary judgment where there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Federal Rule of Civil Procedure 56(c). The Supreme Court has explained that the moving party's burden may be discharged "by 'showing'--that is, pointing out to the [trial] court--that there is an absence of evidence to support the nonmoving party's case." *Celotex Corp. v. Catrett, supra.* The *Celotex* Court held:

> [Summary judgment is appropriately entered] against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial. In such a situation, there can be "no genuine issue as to any material fact," since a complete failure of proof concerning an essential element of the nonmoving party's case necessarily renders all other facts immaterial. The moving party is "entitled to judgment as a matter of law" because the nonmoving party has failed to make a sufficient showing on an essential element of her case with respect to which [he or] she has the burden of proof.

Id. at 322-23; *see also Anderson v. Liberty Lobby, Inc.*, 477 U.S at 249 ("there is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party").

C. Conclusions of Law Concerning Motion to Exclude

1. Because the asserted opinions of Gerald Moore and Dr. Hugh Spencer fail to meet the standards for admissibility under the Federal Rules of Evidence and carry substantial danger of unfair prejudice, confusion of issues, and misleading the jury, the court should exclude them, as set forth more fully below.

2. Mr. Moore's opinion concerning the date when chemicals from the plant first allegedly reached plaintiffs' wells is speculative, at best. Mr. Moore conducted no testing of the wells that allegedly pumped groundwater under Slow Creek. His conclusion that chemicals arrived at such wells from the plant in 1970 is based upon an assumption that, in dry weather, the water level in plaintiffs' wells was low enough to induce a reversal in the normal flow of groundwater. Yet, Mr. Moore did not examine any historical rainfall records nor could he otherwise testify concerning when waters in plaintiffs' wells were allegedly low enough to cause this phenomenon.

3. Mr. Moore could not point to any support in the scientific literature concerning the methods employed by other hydrogeologists for determining the specific times in the past alleged pumping of wells had in fact caused a reversal of normal groundwater flow sufficient to pull groundwater under a creek.

4. Mr. Moore's proposed opinion concerning when chemicals from the plant first allegedly arrived at plaintiffs' wells is not based upon "demonstrably objective" methodology, as required by the Fourth Circuit in the *Baller* case.

5. Because Mr. Moore's proposed testimony is inherently speculative and not based upon "demonstrably objective" methodology, it should be excluded under Rules 702 and 703 of the Federal Rules of Evidence.

6. In addition, even if Mr. Moore's proposed opinions *were* admissible under Rules 702 and 703, they should be excluded under Rule 403 of the Federal Rules of Evidence, because the danger of unfair prejudice to Litton greatly outweighs any probative value.

7. Similarly, Dr. Spencer's proposed testimony concerning the levels of chemicals supposedly existing in plaintiffs' wells prior to 1987 should be excluded.

8. First, Dr. Spencer cannot be considered an expert within the meaning of the Federal Rules of Evidence on the particular issues upon which he has been offered. This case requires an expert with expertise in determining the fate of chemicals in groundwater. This is an exercise that Dr. Spencer has never before performed. In addition, this case specifically involves determining the fate of TCE in the environment. Again, this is an exercise that Dr. Spencer has never before performed. It is apparent from the record, and plaintiffs do not dispute, that the entire basis for Dr. Spencer's theories rests upon his having reviewed a small portion of the scientific literature. Yet, Dr. Spencer admitted that he had read only a portion of that literature and "hoped" to review the remainder during the next *decade*. In addition, the author of the particular study upon which Dr. Spencer placed great reliance, Dr. Paul Roberts of Stanford University, reviewed Dr. Spencer's efforts in this case and submitted an affidavit to the Court to the effect that such reliance was not justified. Accordingly, Dr. Spencer cannot be considered an expert competent to testify concerning the fate of TCE in an aquifer.

9. Second, Dr. Spencer's calculations are not based upon any "demonstrably objective" methodology, as required by the *Baller* case. He is unable to cite any scientific support for his use of an "environmental half-life" technique or methodology for the back-calculation of TCE over a period of 16 years or for any other time. Mr. Moore himself conceded that he had never heard of the technique that Dr. Spencer was purporting to use. Plaintiffs have offered no support in the scientific literature for Dr. Spencer's calculations. Although "half-lives" may be used scientifically to forward-calculate various parameters, such use is not equivalent to the back-calculation that Dr. Spencer has attempted. In a forward calculation, conditions can be controlled, frequent measurements can be taken, and estimates can be changed repeatedly to comport with actual data. Nothing of a similar nature is available with respect to alleged back-calcula-

tions. Because of its lack of support in the scientific literature, Dr. Spencer's approach is, at best, a "novel" approach that has not found general (or even limited) acceptance in the scientific community. Accordingly, it is too speculative to be considered by a jury under Rules 702 and 703 of the Federal Rules of Evidence.

10. Third, Dr. Spencer's calculations are admittedly speculative: he admitted during his deposition that it was fair for counsel to describe the calculations as such; he admitted in his affidavit that his calculations could best be described as "first approximations when . . . [the facts] are not understood"; and he admitted that he could not reduce the error range of his calculations to less than 1,400 percent. Again, based upon such admissions, Dr. Spencer's conclusions are too speculative to be considered by a jury under Rules 702 and 703 of the Federal Rules of Evidence.

11. Fourth, Dr. Spencer's calculations are not supported by, and are in fact contradicted by, actual data from the Carroll Well. Based upon Dr. Spencer's own deposition testimony, he would have expected the concentrations of TCE in the Carroll Well to have decreased steadily from their discovery in 1987, *i.e.*, showing a half-life of between 1.5 and 2.0 years. Instead of showing such a decline, however, Dr. Spencer conceded that the Carroll Well data demonstrated *no* half-life, *i.e.*, that concentrations of TCE were steady. He offered no explanation. Because his opinions concerning historical TCE concentrations at the Carroll Well are not based upon actual data *from* the Carroll Well, and in fact are contradicted by such data, there is no reasonable basis for Dr. Spencer's opinions under Rules 702 and 703 of the Federal Rules of Evidence.

12. Fifth, in light of the exclusion of Mr. Moore's testimony concerning when chemicals from the plant first allegedly arrived in plaintiffs' wells, there is no reasonable basis in the

record for Dr. Spencer's opinion, which assumes that TCE had arrived in plaintiffs wells in 1970.

13. Accordingly, the proposed testimony of Mr. Moore concerning when chemicals from the plant first allegedly arrived at plaintiffs' wells should be excluded.

14. Consequently, the proposed testimony of Dr. Spencer concerning the levels of TCE that allegedly occurred in plaintiffs' wells from 1970 to 1987 should be excluded.

D. Conclusions of Law Concerning Motion on Causation

1. The following elements, among others, must be shown by a plaintiff seeking damages or recovery as a result of alleged exposure to chemicals from groundwater:

> (1) release by defendant of complained of chemicals into the environment; (2) chemical migration into the groundwater and further migration of groundwater into the plaintiffs' water supply; (3) ingestion of these chemicals by the plaintiff; (4) injury; and (5) that the ingested chemicals were the cause of the injuries.

December 5, 1989, Memorandum Opinion and Order, affirming October 12, 1989, Memorandum and Recommendation as "consistent with current case law."

2. The exclusion of the testimony of Mr. Moore concerning *when* chemicals from the plant allegedly migrated to plaintiffs' water supply, and the exclusion of the testimony of Dr. Spencer concerning the levels of chemicals to which plaintiffs allegedly were exposed, leave plaintiffs with inadequate admissible evidence to satisfy their burdens of proof under elements (2) and (3) (migration and ingestion, respectively) set forth above. Accordingly, their claims for personal injury, as a result of the alleged exposure to chemicals from the plant, should be dismissed.

3. North Carolina, as elsewhere, places on a plaintiff the burden of proving that a defendant actually caused his injuries. *Starnes v. Taylor*, 272 N.C. at 391 ("to establish liability . . . there must be proof of [action] . . . by the defendant, which was the proximate cause of the plaintiff's injury . . ."); *Azzolino v. Dingfelder*, 71 N.C. App. at 298; *Lindsey v. Clinic for Women, P.A.*, 40 N.C. App. at 462.

4. In order to establish a *prima facie* case of medical causation, plaintiffs must show by a preponderance of the evidence that, but for their alleged exposures, they would not have developed their specific illnesses or complaints. *See In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1261-63 (testimony of expert rejected because he "does not rule out the myriad other possible causes of the veterans' afflictions"); *In re Swine Flu Immunization Products Liab. Litigation*, *supra*.

5. It is not enough for plaintiffs to show that exposure to the chemicals at issue has a *potential* for causing harm. *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d at 828 (a mere possibility of medical causation is insufficient); *Sterling v. Velsicol Chemical Corp.*, 855 F.2d at 1199-201; *In re "Agent Orange" Product Liability Litigation*, 818 F.2d at 164-65; *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1231-34. For that reason, mere exposure to a potentially toxic substance does not constitute a "physical injury" upon which a claim can be based.[12] Each individual plaintiff also has the burden of establishing that he had, in fact, suffered a physical injury or illness as a result of exposure to the chemicals at issue. *See, e.g.*, *Novak v. United States*, 865 F.2d at 721 ("plaintiff must show

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[12] *See, e.g., De Stories v. Phoenix*, 154 Ariz. at 607 (exposure to asbestos dust and increased risk of cancer do not create legal injury); *Morrissy v. Eli Lilly & Co.*, 76 Ill. App. 3d at 761 (exposure to drug and increased risk of medical problems); *Cathcart v. Keene Indus. Insulation*, 324 Pa. Super. at 151-52 (ingestion of asbestos fibers does not constitute a compensable injury).

that any antigen reaction she may have had was a reaction to the swine flu shot"); *see also Fitzgerald v. Manning*, 679 F.2d at 346.[13]

6. In cases such as this, in which the alleged connection between exposure and plaintiffs' alleged injuries is strongly disputed, plaintiffs must produce expert testimony concerning causation. The expert testimony must establish, *to a reasonable degree of medical certainty*, that the alleged injuries stem from the exposures in question. *Owens v. Bourns, Inc.*, 766 F.2d at 149-50; *Fitzgerald v. Manning*, 679 F.2d at 350; *see also Ralston Purina Co. v. Edmunds*, 241 F.2d at 168 ("the jury may not be permitted to guess between competing possibilities").[14]

7. The Federal Rules of Civil Procedure require that meritless cases be disposed of on summary judgment, without regard for whether they are complicated or simple, heavily laden or lightly burdened with paper. The Fourth Circuit has noted that, even in complex cases, summary judgment is appropriate. *Terry's Floor Fashions, Inc. v. Burlington Indus., Inc.*, 763 F.2d 604, 610 (4th Cir. 1985).

8. Because the medical causation opinions of Drs. Broughton, Feldman, and Rodgers are dependent upon their reliance on Dr. Spencer's proposed testimony concerning levels

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[13] As the court in *Fitzgerald* stated:

> A mere possibility of such causation is not enough; and when the matter remains one of pure speculation or conjecture, or the probabilities are at best evenly balanced, it becomes the duty of the court to direct a verdict for the defendant.

Fitzgerald v. Manning 679 F.2d at 348, *quoting* Prosser, Torts at 245 (3d ed. 1964).

[14] In a federal diversity action, the sufficiency of evidence to create a jury question is a matter governed by federal law. *Fitzgerald v. Manning*, 679 F.2d at 346; *Bryan v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 565 F.2d at 281; *Wratchford v. S. J. Groves & Sons Co.*, 405 F.2d at 1066; *Owens v. International Paper Co.*, 528 F.2d at 609.

of TCE that allegedly occurred in plaintiffs' wells from 1970 to 1987, they fall of their own weight and cannot satisfy plaintiffs' burden on motion for summary judgment.

9. Plaintiffs offer no evidence concerning medical causation other than that offered by Drs. Broughton, Feldman, and Rodgers. Because the testimony of Drs. Broughton, Feldman, and Rodgers must be excluded, Litton's Motion on Causation should be granted.

10. In addition, even if the proposed testimony of Mr. Moore and Dr. Spencer were accepted into evidence in this case, Litton's Motion on Causation demonstrates that plaintiffs do not have sufficient admissible evidence of medical causation to allow a reasonable jury to find in plaintiffs' favor on this element of their claims. Accordingly, the undersigned concludes that the Motion on Causation should be granted even if the Motion to Exclude were denied and the Spencer/Moore testimony allowed. The undersigned's analysis with respect to this issue is set forth more fully below.

11. Plaintiffs failed in many respects to address or rebut the points made in Litton's Group Affidavit, among other authorities. Such points that were not specifically refuted by the affidavits of plaintiffs' experts should be accepted as conceded for purposes of this case. *See Bloodgood v. Garraghty*, 783 F.2d 470, 474-75 (4th Cir. 1986) (counteraffidavits that did not specifically refute points made in movant's affidavits were insufficient to create genuine issue of material fact); *White v. Boyle*, 538 F.2d 1077, 1079-80 (4th Cir. 1976) (summary judgment granted where plaintiff failed to contradict by affidavit specific allegations in defendants' supporting affidavits); *Howard v. Malcolm*, 658 F. Supp. 423, 430 (E.D.N.C. 1987) (summary judgment granted when affidavit of nonmovant "d[id] not respond to many of the [movant's] specific factual assertions).

12. The following plaintiffs have offered no expert medical testimony of injury in fact: Jennifer Simonds, Jonathan Messer, Chuck Hancock, Jr., Justin Gaddis, Derrick Gaddis, and Rusty Chambers. Accordingly, their personal injury claims should be dismissed with prejudice. *See, e.g., Washington v. Armstrong World Indus., Inc.*, 839 F.2d 1121 (5th Cir. 1988) (affirming summary judgment granted to defendant because plaintiff's expert could not express opinion that there was an actionable injury caused by exposure to allegedly toxic substance).

13. The following plaintiffs have offered no expert medical testimony, to a reasonable degree of medical certainty, that any alleged health complaints were caused by their alleged exposure to TCE: Sandra Hancock and Melanie Messer. Accordingly, their personal injury claims should be dismissed with prejudice.

14. The following plaintiffs, at their depositions, testified that they were not seeking to recover in this case for any alleged physical injuries they had suffered: Marvin Garrett and James "Kenny" Green. Accordingly, their personal injury claims should be dismissed with prejudice.

15. As an alternative, independent basis for the recommendation as to Litton's Motion on Causation, the undersigned concludes that an opinion on medical causation should not be admitted unless it is based upon valid human data. *Brock v. Merrell Dow Pharmaceuticals, Inc., supra* ("lack of statistically significant epidemiological proof . . . fatal to the . . . case"); *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d at 830-32; *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1241.

16. In addition, a critical aspect of any claim of medical causation in a toxic tort setting must be the performance, on behalf of plaintiffs, of differential diagnoses. *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1250

("[c]entral to the inadequacy of plaintiffs' case is their inability to exclude other possible causes of plaintiffs' illnesses—those arising out of their service in Vietnam as well as those that all of us face in military and civilian life"). That is, plaintiffs must produce expert medical testimony to the effect that alternative possible causes for plaintiffs' symptoms have been considered and ruled out for specific reasons. Where plaintiffs' medical experts do *not* rule out other potential causes for plaintiffs' complaints, plaintiffs' claims of medical causation cannot be sustained.

17. "Subclinical" findings such as those reported by Dr. Broughton do not qualify as "injury in fact." *See Sterling v. Velsicol Chemical Corp.*, 855 F.2d at 1207-09 (proffered expert testimony by "clinical ecologists" concerning alleged immune system damage rejected as without foundation); *Burns v. Jaquays Mining Corp.*, *supra* (alleged "subclinical injury" insufficient to support a cause of action); *Caputo v. Boston Edison Co.*, C.A. No. 88-2126-Z (D. Mass. July 9, 1990) (LEXIS, Genfed library. Dist. file) (alleged subclinical injury insufficient to withstand summary judgment). Plaintiffs have cited no foundation whatsoever in North Carolina law for the recovery of damages for such alleged "subclinical" injuries.

18. Dr. Broughton's alleged findings in this case are "subclinical," *i.e.*, he cannot testify that any plaintiff has a disease or a clinical injury. Indeed, Dr. Broughton admitted that there is no agreement in the medical profession concerning whether the appearance of his purported subclinical findings were part of any disease process at all or were, instead, "beneficial." Accordingly, even if Dr. Broughton's opinions were admissible, they do not constitute cognizable evidence of the "injury" element of plaintiffs' cause of action.

19. Dr. Broughton's proposed testimony is not admissible, because he does not have an adequate factual basis under Federal Rules of Evidence 702 and 703 for associating plaintiffs'

alleged exposure to TCE with the subclinical findings he purportedly made. First, Dr. Broughton admitted in his affidavit that the control group he allegedly used for comparison purposes to plaintiffs was not, in fact, controlled for age, geographical location, or confounding factors. In addition, because Dr. Broughton cannot rule out the possibility that many other factors, such as the common cold and prescription medications caused the alleged appearance of T-lymphocytes and autoantibodies in plaintiffs, his testimony should be excluded as well under Federal Rule of Evidence 403. The risk of undue confusion from such testimony would greatly outweigh any probative value.

20. Dr. Engum, whom plaintiffs had at one time named as an expert on "medical causation," disavowed any ability to testify to that issue, and plaintiffs did not submit any affidavit from him in response to Litton's Motion on Causation.

21. Dr. Feldman's opinions in this case were expressly conditioned on several assumptions that have proven unfounded. He *assumed* that electrophysiological testing would confirm the blink reflex data submitted earlier by Dr. Bergia, even though he recognized that her data were "severely in question." In fact, testing by Dr. Niles showed that the plaintiffs were normal. He *assumed* that neuropsychological testing would be done on plaintiffs to show that they had been injured. In fact, no additional testing was done, and Dr. White, upon whom Dr. Feldman relies, discredited the earlier opinions of Dr. Engum concerning the only two plaintiffs to whom Dr. Engum had given diagnoses. (Dr. Feldman's purported opinion that Fred Allen Chambers has suffered organic brain damage is deficient and inadmissible because (a) Dr. Feldman has no expertise in neuropsychology, (b) his opinion is unsupported by the deposition testimony of Dr. Roberta White, upon whom he relies, and (c) his opinion is contradicted by the testimony of Dr. Engum--the only neuropsychologist named as an expert witness

by plaintiffs. Dr. Feldman assumed that plaintiffs' statements on the neurological questionnaires would be reliable, but examination showed that those statements were *not* reliable. Furthermore, he assumed that he would be able to rule out other causes of plaintiffs' complaints, but could not rule out many other causes.

22. In *Rohrbough v. Wyeth Laboratories, Inc.*, 719 F. Supp. at 474-75, the court disregarded subsequent opinions offered by an expert when those opinions contradicted the expert's earlier sworn testimony and the expert provided no adequate explanation for the change in his position. The court's statement in *Rohrbough* is equally applicable to Dr. Feldman's position here: "This sudden change of tone . . . suggests that the [latest opinion] may not represent the considered opinion of the doctor himself, but rather an effort on the part of the plaintiffs to create an issue of fact." *Id.* at 475.

23. Dr. Feldman's professed opinions on medical causation run contrary to the very principles and conditions he established in his "opinion" letters and his earlier testimony. Accordingly, his opinions are purely speculative, have no adequate basis in fact, and would be of no assistance to the trier of fact under Federal Rules of Evidence 702 and 703.

24. Any probative value that Dr. Feldman's opinions might have would be greatly outweighed by their undue prejudicial impact. For example, Dr. Feldman is apparently prepared to testify that, even when plaintiffs' electrophysiological tests are normal, plaintiffs may be "sick." Such testimony would cause undue confusion to the jury if admitted. Accordingly, Dr. Feldman's opinions should be excluded under Federal Rule of Evidence 403.

25. Dr. Rodgers' proposed testimony in this case is speculative and has no reliable factual basis. The studies upon which he and plaintiffs' other experts rely are admittedly not on point

and, as shown above, have serious weaknesses conceded by Dr. Rodgers.

26. In an effort to add the appearance of substance to their proposed opinions, plaintiffs' experts listed numerous studies in the Joint Affidavit as a supposed basis for those opinions. Plaintiffs must do more, however, than just cite prior studies; they must show a demonstrably objective means of drawing their conclusions *from* those studies. *United States v. Baller*, 519 F.2d at 465-66. The mere recitation of a list of studies is not a magical incantation paving the way to the witness stand unless it is accompanied by reasoned and scientifically accepted analysis. In the plaintiffs' case, the required analysis is nowhere to be found.

27. In addition, Dr. Rodgers has not adequately ruled out other potential causes of plaintiffs' alleged complaints. Although Dr. Rodgers and other plaintiffs' experts purport to have performed differential diagnoses, they have offered no support for that assertion. In light of their contradictory admissions during their depositions, their bald assertions will not be accepted by the court as sufficient basis for admissibility of their opinions.

28. When a plaintiff does not come forth with sufficient admissible evidence to prove an essential element of his cause of action,

> trial would be a bootless exercise, fated for an inevitable result but at continued expense for the parties, the preemption of a trial date that might have been used for other litigants waiting impatiently in the judicial queue, and a burden on the court and the taxpayers.

Fontenot v. Upjohn Co., 780 F.2d 1190, 1195 (5th Cir. 1986). Thus, the Supreme Court has held that "[s]ummary judgment procedure is properly regarded not as a disfavored procedural

shortcut, but rather as an integral part of the Federal Rules as a whole, which are designed 'to secure the just, speedy and inexpensive determination of every action.'" *Celotex Corp. v. Catrett, supra.*

29. Here, even if the opinions of Mr. Moore and Dr. Spencer were deemed admissible, plaintiffs have clearly failed in their burden of showing sufficient admissible evidence to raise a jury question on the issue of medical causation. Dr. Broughton admitted that no plaintiff has any immune system disease attributable to TCE. Dr. Feldman ignored negative test results and the absence of test data that he previously viewed as indispensable. He failed as well to rule out other possible causes of plaintiffs' alleged complaints. Dr. Rodgers also failed to perform adequate differential diagnoses, ignored the science of epidemiology, and based his opinions upon admittedly flawed studies and an admittedly flawed exposure assessment.

30. The plaintiffs have offered no other expert witness whose testimony relates to the issue of medical causation. In short, plaintiffs simply cannot establish a genuine issue of material fact on this critical element of their tort claims. Therefore, Litton's Motion on Causation should be granted and all of the personal injury claims should be dismissed for failure on the issue of medical causation.

E. Conclusions of Law on Alleged Increased Risk of Disease or For Medical Monitoring

1. Plaintiffs have not cited this court to any statute or case law in the State of North Carolina giving rise to a tort based upon alleged increased risk of disease.

2. In *Eagle-Picher Indus., Inc. v. Cox*, 481 So.2d 517, 520 (Fla. App. 1985), the court faced whether to create a new tort based upon increased risk of future disease and ruled that claims for increased risk of cancer could *not* be maintained, regardless of the degree of certainty expressed by plaintiffs'

experts concerning the likelihood of cancer. That court reasoned that disallowing an action for the plaintiffs' increased risk of cancer "most assuredly promotes judicial economy by discouraging the filing of anticipatory lawsuits and the concomitant protraction of pending lawsuits" and that allowing such an action would only "encourage . . . the use of speculative testimony and lead . . ., necessarily, to inequitable results." *Id.* at 521. Among the inequitable results that would arise, the *Cox* court noted, was that plaintiffs who did not contract the future disease would obtain a windfall. *Id.* at 524.

3. Here, too, any recognition of a claim by any plaintiff for "increased risk" of disease necessarily means that some--if not all--plaintiffs would be compensated when, in fact, no harm would accrue to them in the future. Such a holding, creating a new tort under North Carolina law, would inevitably result in unfair distribution of scarce resources, bringing undeserved riches to some and lack of compensation to others. It would also encourage the filing of speculative lawsuits based upon equally speculative testimony. If this is to be the course of North Carolina law, it should be enunciated in the first instance by the North Carolina legislature or the North Carolina Supreme Court.

4. Similarly, this court should not recognize a common law claim for the costs of medical monitoring in the absence of clear direction from the North Carolina courts or legislature.

5. If a North Carolina court were faced with the question of whether to create a tort based upon aleged increased risk of disease or for medical monitoring costs, the undersigned has concluded that it would decline to create such a tort. Instead, it would look to the legislature for guidance. In the absence of an legislative directive creating such a tort, the North Carolina courts would refuse to countenance such a claim. *See Gardner v. North Carolina State Bar*, 316 N.C 285, 341 S.E.2d 517 (1986) (it is the court's "duty . . . to interpret our own state's law according to the policies expressed by our legislature and the

best interests of our state. In the first instance, and absent constitutional restraint, questions as to public policy are for legislative determination"); *Northcutt v. Clayton*, 269 N.C. 428, 152 S.E.2d 471 (1967) (it is prerogative of legislature "in the first instance" to extend provisions of Consumer Finance Act); *In re Will of Parker*, 76 N.C. App. 594, 334 S.E.2d 97 (1985), *review den In re Will of Parker*, 315 N.C. 184, 337 S.E.2d 859 (1985), *disapproved by Daniels v. Montgomery Mut. Ins. Co*, 320 N.C. 669, 360 S.E.2d 772 (1987) (it is the preorgative of the legislative, and not the courts, to increase bond requirements); *Simmons v. Wilder*, 6 N.C. App. 179, 169 S.E.2d 480 (1969) ("[w]hat laws shall be changed and when they are to be changed is within the prerogative of the Legislature, not the Judiciary"). *See also Hatfield v. Palles*, 537 F.2d 1245, 1248-49 (4th Cir. 1976) (cited by plaintiffs) ("it is quite clear . . . that rules of common law are not to be changed . . . except by clear and unambiguous statutory language").

6. Plaintiffs refer to cases in which damages have been awarded for reasonably certain future injuries as well as present injuries; however, the cases to which they refer are totally inapplicable here. In the cases cited by plaintiffs, damages for reasonably certain future injuries were awarded only after plaintiff had established a clear present physical injury caused by defendant's conduct, *e.g.*, mouth or head injuries in automobile accidents, burns from a job site accident. Here, plaintiffs cannot demonstrate any injuries caused by their alleged exposure to TCE. Accordingly, even if North Carolina would allow actions based upon increased risk of disease, plaintiffs' action fails because of their lack of a *prima facie* case on medical causation. *See Deleski v. Raymark Indus., Inc.*, 819 F.2d 377, 380-81 (3d Cir. 1987) (likelihood of future cancer from exposure to asbestos in the absence of present physical injury does not give rise to cause of action for increased risk under Pennsylvania and New Jersey law); *Amendola v. Kansas City S. R. Co.*, 699 F. Supp. 1401, 1403-06 (W.D. Mo. 1988) (inhalation of asbestos fibers

alone, without proof of present physical injury, does not constitute sufficient basis for increased risk claim); *Plummer v. Abbott Laboratories*, 568 F. Supp. 920, 922 (D.R.I. 1983) ("[i]t is an abecedarian principle of tort law that an individual must be injured to recover for the negligent acts of another"); *Laswell v. Brown*, 524 F. Supp. 847, 850 (W.D. Mo. 1981), *aff'd*, 683 F.2d 261 (8th Cir. 1982), *cert. denied*, 459 U.S. 1210 (1983) ("[a] lawsuit for personal injuries cannot be based upon the possibility of some future harm"); *Mink v. University of Chicago*, 460 F. Supp. at 719 ("[t]he mere fact of risk without any accompanying physical injury is insufficient to state a claim"); *Caputo v. Boston Edison Co.*, *supra* (claim for increased risk of disease dismissed on summary judgment in absence of sufficient evidence that plaintiff suffered any injury caused by allegedly excessive exposure to radiation); *Burns v. Jaquays Mining Corp.*, *supra* (alleged "subclinical injury" insufficient to support cause of action for increased risk of asbestosis); *Morrissy v. Eli Lilly & Co.*, *supra* (heightened risk of cancer and other diseases insufficient basis for claim in absence of present injury).

7. Even if plaintiffs had established a *prima facie* case on the issue of medical causation, *i.e.*, even if plaintiffs had shown a genuine issue of fact on whether they suffered injuries as a result of their alleged exposure to the chemicals at issue, their claims based on alleged increased risk of disease would fail because plaintiffs have not shown that they are "reasonably certain" to contract any disease in the future. *See Short v. Chapman*, 261 N.C. at 682; *Callicutt v. Hawkins*, 11 N.C. App. at 547; *Dickson v. Queen City Coach Co.*, 233 N.C. 167, 174, 63 S.E.2d 297, 302 (1951); *see also Fisher v. Rogers*, 251 N.C. 610, 112 S.E.2d 76, 78 (N.C. 1960). Indeed, plaintiffs' medical experts have specifically disavowed any ability to state, to a reasonable degree of medical certainty, that any plaintiff is likely to suffer from any disease in the future as a result of the alleged exposure. Dr. Feldman has testified that he believes that plaintiffs are recovering from any problems they may have had in the

past. Dr. Rodgers similarly has testified that he believes that it is unlikely that plaintiffs will develop any additional problems beyond what they currently purportedly have. In light of these admissions, plaintiffs here fail to meet the "reasonably certain" test that has been adopted for those cases in which compensation is sought for the future consequences of present injuries caused by a defendant.

8. Even if the undersigned were to hold that North Carolina would recognize a claim, in some circumstances, for medical monitoring, no such relief can be obtained by plaintiffs here. Given both the lack of admissible evidence that plaintiffs' alleged medical problems were caused by the alleged exposure to the chemicals at issue and the lack of evidence that plaintiffs are more likely than not to contract any disease in the future, their medical monitoring claims must be dismissed. *See Catasauqua Area School District v. Eagle-Picher Indus., Inc.*, 1988 U.S. Dist. LEXIS 11316, at 3 (Civ. Action No. 85-3743, E.D. Pa., Sep. 23, 1988) (absent evidence of reasonable or substantial likelihood that anyone will get disease in the future as a result of exposure to asbestos, claim for medical monitoring costs would not lie); *see Mateer v. U.S. Aluminum*, 1989 U.S. Dist. LEXIS 6323, Civ. Action No. 88-2147, at 10 (E.D. Pa. 1989) (granting summary judgment on claim for medical monitoring absent present manifestation of disease or reasonable likelihood of contracting disease).

9. One court that has analyzed a claim for so-called medical monitoring costs held that such costs could be obtained only if surveillance is "reasonable and necessary" based, among other things, on "the significance and extent of exposure." *De Stories v. Phoenix*, 154 Ariz. at 610. Here, plaintiffs have failed to adduce admissible evidence that their alleged exposure was significant in any respect. Accordingly, plaintiffs have not carried their burden of showing that medical monitoring, beyond that which anyone in the general population should undergo as

part of normal good health practice, is reasonable and necessary as a matter of law.

F. Conclusions of Law Concerning Emotional Distress

1. Due to the vagueness of emotional distress claims, the susceptibility for abuse, and the possibility that such claims could flood the courts, the law has wisely established limitations on recovery of such damages. As one court cautioned:

> Despite the law's recognition of fear as a debilitating emotional injury worthy of redress under certain circumstances, the spectre of unlimited liability from an army of plaintiffs parading their tumescent fears into the courtroom supported by a corps of psychiatrists has resulted in proper judicial restraint in this area. Fear is a widespread phenomenon, highly subjective, contagious and capable of being feigned. Thus the courts have proceeded cautiously and insisted on numerous safeguards and conditions before permitting claims of emotional distress in general and fear in particular to go to the jury.

Arnett v. Dow Chemical Co., No. 729586, *slip op.* at 19 (Cal. Super. Ct., San Francisco County, March 21, 1983); *see Ackerson v. Dow Chemical Co.*, No. 808161, slip op. at 15 (Cal. Super. Ct., San Francisco County, April 4, 1989). Another court has emphasized:

> Every emotional upset cannot constitute a cause of action. Indiscriminate allowance of actions for mental anguish would encourage neurotic overreactions to trivial hurts, and the law should aim to toughen the psyche of the citizen rather than pamper it.

Mink v. University of Chicago, 460 F. Supp. at 784. As set forth more fully below, plaintiffs have not met their burden under *Celotex* with respect to the preconditions which must be met for

an emotional distress claim to succeed under North Carolina law.

2. Until recently the law of North Carolina, as in most other jurisdictions, required proof of some physical injury caused by defendant which accompanies the claimed emotional distress. *See e.g., Campbell v. Pitt County Memorial Hosp., Inc.*, 352 S.E.2d at 909; *Crews v. Provident Finance Co.*, 271 N.C. 684, 689, 157 S.E.2d 381, 385 (1967); *Mateer v. U.S. Aluminum*, C.A. No. 88-2147 (E.D. Pa. June 2, 1989) (LEXIS, Genfed library, Dist. file); *Deleski v. Raymark Indus., Inc., supra*; *Bubash v. Philadelphia Elec. Co.*, 717 F. Supp. 297 (M.D. Pa. 1989); *Wilkie v. State*, 161 Ariz. 541, 779 P.2d 1280 (App. 1989); *De Stories v. Phoenix*, 154 Ariz. at 610. Similarly, plaintiffs in North Carolina and elsewhere were required to show that the emotional distress, in and of itself, caused additional subsequent physical injury (or physical manifestation). *See, e.g., Woodall v. Pinehurst Surgical Clinic*, 78 N.C. App. at 232; *Edwards v. Advo Systems, Inc.*, 93 N.C. App. 154, 376 S.E.2d 765 (1989) (*disapproved by Johnson v. Ruark Obstetrics & Gynecology Assoc., P.A*, 327 N.C. 283, 395 S.E.2d 85 (1990)); *Stites v. Sundstrand Heat Transfer Corp.*, 660 F. Supp. 1516, 1526 (W.D. Mich. 1987); *Wilkie v. State, supra*; *De Stories v. Phoenix*, 154 Ariz. at 610; *Houston v. Texaco, Inc.*, 371 Pa. Super. 399, 538 A.2d 502 (1988), *app. denied*, 520 Pa. 575, 549 A.2d 136 (1988). For the reasons set forth in the preceding portions of these conclusions, plaintiffs' proof in this case would fail under *Celotex* on both of these issues.

3. As discussed *supra*, however, the North Carolina Supreme Court issued an opinion in *Johnson v. Ruark Obstetrics and Gynecology Associates, P.A., supra*, which partially overruled earlier North Carolina appellate decisions and held that, in at least some circumstances, proof of physical injury and subsequent physical manifestation would not be required to recover under a claim for negligent infliction of emotional distress. *Id.*,

slip op. at 23-24. *Johnson* involved a claim brought by two parents for emotional distress suffered as a result of the stillbirth of their child. Nevertheless, plaintiffs' claims cannot survive under even the *Johnson* standards for at least two reasons.

4. First, although the North Carolina Supreme Court in *Johnson* eliminated the physical injury and physical manifestation requirements for recovery for emotional distress, it emphasized the importance of another substantial limitation on such claims. Specifically, the court in *Johnson* held that recovery for negligent infliction of emotional distress is limited to instances of "severe emotional distress" suffered as a foreseeable result of the defendant's negligent conduct. *Id.*, slip op. at 28. The court defined this term to mean:

> [A]ny emotional or mental disorder, such as, for example, neurosis, psychosis, chronic depression, phobia, or any other type of severe and disabling emotional or mental condition which may be generally recognized and diagnosed by professionals trained to do so.

Id. To survive summary judgment on their emotional distress claims, therefore, plaintiffs must show, by admissible expert testimony, that they suffer from a recognized, diagnosed severe and disabling emotional or mental disorder. Plaintiffs have not done so.

5. The only expert named by plaintiffs to testify about their mental and emotional status was Dr. Eric Engum, a psychologist who examined only five plaintiffs. Plaintiffs offered no affidavit, however, from Dr. Engum in opposition to Litton's motion for summary judgment. Moreover, in deposition testimony Dr. Engum offered a diagnosis of a mental disorder for only two of those plaintiffs, Martha Carroll and Debbie Chambers. As to *all* of the plaintiffs (including those two), however, Dr. Engum disclaimed any opinion that they suffer any disorder that is causally related to their exposure to TCE or any other

chemical. Plaintiffs have offered no other expert to supply that missing opinion. In addition, Dr. Engum's proffered diagnoses for Mrs. Carroll and Mrs. Chambers were expressly rejected by the chosen expert neuropsychologist of Dr. Feldman, plaintiffs' designated expert in neurology. Dr. Engum's opinions thus do not suffice to meet plaintiffs' burden under *Celotex* to resist summary judgment.

6. In addition, in their memorandum in opposition to Litton's motion for summary judgment on plaintiffs' emotional distress claims, plaintiffs expressly conceded that as to virtually all of the plaintiffs, their emotional distress "has not reached pathologic levels." Plaintiffs' Mem. in Opp. to Motion on Emotional Distress, at 11. With respect to the only two exceptions to that statement claimed by plaintiffs, James Carroll, Sr., and Fred Allen Chambers, plaintiffs refer to the testimony of Dr. Robert Byron. As to even these two plaintiffs, however, plaintiffs' proffer is inadequate. Dr. Byron was not named by plaintiffs in response to the court's scheduling orders requiring plaintiffs to name their expert witnesses. Therefore, plaintiffs are precluded from using him as an expert. Moreover, Litton has identified sufficient deficiencies and inconsistencies in Dr. Byron's testimony (even if it were permissible under the court's orders) as to render ineffective plaintiffs' reliance on it as the sole basis for resisting summary judgment. *See, e.g.*, Litton Reply mem. at 36 n. 47; Group Affid. at 29, 69. *See also* Findings of Fact at para. 230, *supra*.

7. To the extent that plaintiffs allege that such vague symptoms as headaches and other transitory phenomena have been caused by their alleged emotional distress, such complaints do not constitute the severe and disabling emotional or mental condition that the law requires for maintenance of an action. *See Johnson v. Ruark Obstetrics and Gynecology Associates, P.A., supra. See also Burns v. Jaquays Mining Corp., supra* (acid indigestion, weeping, muscle spasms, depression and insomnia

not types of harm required for emotional distress claim); *Edwards v. Advo Systems, Inc.*, *supra* (vague statements of physical problems resulting from emotional distress such as loss of sleep, worry and weight loss not sufficient to preclude summary judgment); *Falzone v. Busch*, 45 N.J. 559, 569, 214 A.2d 12 (1965), *quoted in Ayers v. Jackson Township*, 189 N.J. Super. 561, 569, 461 A.2d 184 (1983) ("where fright does not cause *substantial* bodily injury or sickness, it is to be regarded as too lacking in seriousness and too speculative to warrant the imposition of liability").

8. Second, when the alleged emotional distress is, as in this case, the fear of future disease (primarily cancer), such fear must be reasonable; irrational beliefs cannot form the basis for recovery for fear of disease. *See, e.g., Broussard v. Olin Corp.*, No. 88-392 (3d Cir. June 28, 1989) (LEXIS, Genfed library, Dist. File) (where plaintiff failed to show that cancer was likely to result from phosgene gas incident, court held that "mere speculation concerning an event cannot provide the basis for an award for anxiety") (Att. 46); *Mateer v. U.S. Aluminum*, *supra* (granting summary judgment for defendant because of plaintiffs' failure to establish a reasonable basis for fear of future illness arising from ingestion of well water containing certain chemicals); *Arnett v. Dow Chemical Co.*, slip op. at 24-25 (plaintiffs must show reasonable fear by proving an objective basis therefor) (Att. 44). Similarly, under North Carolina law, a personal injury plaintiff can recover for fear of cancer *only* where the disease or condition feared by the plaintiff "might *reasonably* be apprehended to result from the injury. . . ." *Bullock v. Newman*, 93 N.C. App. 545, 378 S.E.2d 562, 565 (1989) (emphasis added). *See also Alley v. Charlotte Pipe & Foundry Co.*, 159 N.C. 327, 74 S.E. 885 (1912); *Bowers v. Western Union Tel. Co.*, 135 N.C. 504, 47 S.E. 597 (1904) (dismissing emotional distress claim where "[i]t was [plaintiffs'] own misapprehension which caused him any uneasiness, and not the negligence and delay of the defendant," quoted with

approval in *Johnson v. Ruark Obstetrics and Gynecology Associates, P.A., supra*).

9. In this case, plaintiffs have been unable to submit admissible evidence sufficient to carry their burden on a motion for summary judgment of showing that their alleged fears of cancer or other diseases could be considered reasonable. Plaintiffs do not have any present illnesses that can be attributed to their alleged chemical exposure and have offered to the court no admissible evidence to show that their alleged exposure to these chemicals at the levels objectively measured, or even at the levels speculatively suggested by Dr. Spencer, can or did cause adverse health effects. Furthermore, the only calculations of increased risk of disease offered by plaintiffs' experts, *i.e.*, Dr. Rodgers' calculations for alleged excess risk of cancer, show that plaintiffs are singularly *unlikely* to contract cancer. According to Dr. Rodgers, the plaintiff at highest risk bears a risk of contracting cancer as a result of her alleged exposure of only four out of 1,000, compared to an admitted background risk of one in four. As a matter of law, "fear" of such alleged increased risk is not reasonable (apart from its not rising to the level of a recognized and diagnosed mental disorder) and cannot be compensated.

10. Because plaintiffs' fears are not objectively reasonable, they cannot be compensated. *See Williamson v. Bennett*, 251 N.C. 498, 507, 112 S.E.2d 48, 55 (1980). In *Williamson*, the plaintiff was involved in an automobile accident and feared that she had hit an imaginary child on a bicycle. Plaintiff experienced no physical injury, but shortly after the accident began to experience emotional distress, for which she sought damages. The North Carolina Supreme Court held that "[t]he defendant was under no duty to anticipate or to take precautions against a mere possibility that plaintiff or other persons might imagine a state of facts that did not exist." *Id.* at 55. The claims

for emotional distress by plaintiffs in this case fail for this reason as well.

G. Conclusions of Law on Nuisance and Trespass

1. Plaintiffs who do not have a possessory interest in the properties in issue cannot maintain an action in trespass. *See State ex rel. Rhodes v. Simpson*, 325 N.C. 514, 385 S.E.2d at 332 (no action for trespass absent possessory interest); *Kent v. Humphries*, 303 N.C. 675, 281 S.E.2d at 45 (plaintiff must show sufficient property interest to maintain nuisance action); *Matthews v. Forrest*, 235 N.C. 281, 69 S.E.2d 553, 555 (1952) (plaintiff must be in possession of property to maintain trespass action); *Keziah v. Seaboard A. L. R. Co.*, 272 N.C. 299, 158 S.E.2d 539, 548 (1968); *Kuykendall v. Turner*, 61 N.C. App. 638, 301 S.E.2d 715, 718 (1983) (possession by plaintiff is one of the required elements of trespass). Many of the plaintiffs admittedly do not have such an interest.

2. There are strong and sound policy reasons why a showing of more than a *de minimis* encroachments of chemicals (all that plaintiffs have been able to show here) is necessary to allow claims for trespass and nuisance to proceed. First, in the absence of proof to a reasonable degree of medical certainty that the chemicals did cause injury, any verdict would necessarily be based upon speculation and irrational fear. This is a consequence that courts should zealously avoid. Second, because of the ubiquitous nature of these chemicals, there are millions of potential targets for those litigious individuals who wish to make modern industry an insurer for all of their real and imagined health complaints. Thus, if liability can arise from the mere presence of chemicals, *i.e.*, without a showing of medical causation to a reasonable degree of medical certainty, innocent businesses and individuals can be hauled into court by plaintiffs virtually at random.

3. Plaintiffs have failed to adduce admissible expert testimony to create a *prima facie* case that they have incurred any illnesses or are likely to incur any illnesses as a result of the alleged exposures. Instead, the only competent evidence submitted reveals that level of chemicals to which plaintiffs were allegedly exposed was minuscule, at best. The chemical found in the highest average concentration in any of plaintiffs' wells --TCE--has been measured at an average concentration of less than 20 parts per billion ("ppb"). At these levels, the chemicals found in plaintiffs' wells are indistinguishable from zero with respect to any alleged effect they might have on the human body.

4. North Carolina does not recognize torts of nuisance or trespass based on trivial invasions of property. In *Twitty v. State*, 85 N.C. App. 42, 354 S.E.2d at 302, for example, the court held that for liability to exist under a nuisance theory plaintiffs must demonstrate "(1) that defendant's maintenance and operation of [an] enterprise is *unreasonable* and (2) that because of the unreasonable conduct there has been *substantial* injury and loss of value to plaintiffs' property." (Emphasis in original.) The court thus held that the operation of a PCB disposal facility was neither a public nor a private nuisance. *See also* Dobbs, *Trespass to Land in North Carolina, Part I--The Substantive Law*, 47 N.C.L. Rev. 31, 34 (1968) (trivial trespass does not impose liability in North Carolina). *Cf. Williams v. South & South Rentals, Inc.*, 82 N.C. App. 378, 346 S.E.2d 665, 669 (1986) (in considering a remedy for an alleged trespass, court must consider the fact that "the encroachment is minimal").

5. Plaintiffs cited this court to a number of other North Carolina cases, including *Holton v. Northwestern Oil Co.*, *supra*. In *Holton*, a case in which alleged physical encroachment caused by an overflowing ditch and noxious odors was held not to preclude summary judgment, the court stated that the law:

> does not recognize every business or use of property as a nuisance that imparts a degree of impurity to the

> air, for if such were the case, towns could not be built, nor life in compact communities tolerated and even the ordinary uses of property would be seriously interfered with . . . *The law only deals with real, substantial injuries . . . and will not lend its aid . . . simply because his neighbor is annoyed, or even damaged thereby, unless the use complained of is both in violation of that neighbor's right and unreasonable* . . . when the matters complained of are such as are common and usual, and no unreasonable and unnecessary injuries are inflicted, the law does not interfere.

Id. at 393 (emphasis added).

6. Similarly, in *Watts v. Pama Manufacturing Co.*, 256 N.C. 611, 124 S.E.2d 809, 815 (1962), where a judgment for plaintiffs was reversed, the North Carolina Supreme Court stated:

> By substantial [injury] is meant an invasion that involves more than slight inconvenience or petty annoyance. The law does not concern itself with trifles. Practically all human activities, unless carried on in a wilderness, interfere to some extent with others or involve some risk of interference . . . . Each individual in a community must put up with a certain amount of annoyance, inconvenience or interference . . . .

7. Other cases cited by plaintiffs are clearly distinguishable or otherwise not inconsistent with the cases relied upon herein. For example, in *Masten v. Texas Co.*, 194 N.C. 540, 140 S.E. 89, 90 (1927), a premise of the court's holding was that plaintiffs' water had been rendered "unfit for use." Here, plaintiffs cannot show any actual or probable medical injuries related to the chemicals in their water. Accordingly, their water has not been rendered "unfit for use." *Stowe v. Gastonia*, 231 N.C. 157, 56 S.E.2d 413 (1949), involved only the issue of whether there was a misjoinder and did not address whether particular facts

were actionable. In *Aydlett v. Carolina By-Products Co.*, 215 N.C. 700, 2 S.E.2d 881 (1939), the court did not address the sufficiency of the evidence to constitute an actionable injury; rather, the issue was the reasonableness of defendant's conduct. The reasonableness of Litton's conduct is not before the court at this time.

8. Review of well-reasoned cases from other jurisdictions also shows that a *de minimis* encroachment such as the instant case presents cannot serve as the basis for an action in trespass and nuisance. In *Bradley v. American Smelting & Refining Co.*, *supra*, plaintiffs brought an action for trespass and nuisance based upon the deposit of microscopic airborne particles of arsenic and cadmium on their property from defendant's copper smelter. The court granted summary judgment to defendant, noting:

> While at common law any trespass entitled a landowner to recover nominal or punitive damages for invasion of his property, such a rule is not appropriate under the circumstances before us. No useful purpose would be served by sanctioning actions in trespass by every landowner within a hundred miles of a manufacturing plant. Manufacturers would be harassed and the litigious few would cause the escalation of costs to the detriment of many .... [T]he plaintiff who cannot show that actual and substantial damages have been suffered should be subject to dismissal of his cause upon a motion for summary judgment.

Id. at 1156.

9. Similarly, in *Good Fund, Ltd.-1972 v. Church*, *supra*, land developers brought a trespass action alleging contamination of their property located near a nuclear arms plant. Finding no actual damages, the court held that "the plaintiffs can show nothing more than a potential harm from the deposition levels on their property and that is not a sufficient invasion of their

property interest to be actionable." *Id.* at 533. *See also Martin v. Arundel Corp.*, 216 Md. 184, 140 A.2d 146 (1958) (affirming directed verdict for defendant in nuisance action for plaintiff's failure to prove damages beyond mere "trifles"); *Amphitheaters, Inc. v. Portland Meadows*, 184 Or. 336, 198 P.2d 847, 850 (1948) (mere casting of light upon plaintiffs' premises did not constitute a trespassory invasion); *Powell v. Superior Portland Cement, Inc.*, 15 Wash. 2d 14, 17, 129 P.2d 536, 539 (1942) (persons dwelling near manufacturing plant may not recover for a certain amount of smoke, fumes or gas emitted by plant); *see also Fargason v. Economy Furniture, Inc.*, 356 S.W.2d 212, 213 (Tex. Civ. App. 1962) (jury not required to speculate in nuisance cases as to damages from inconvenience resulting from smoke, sawdust and fumes blown onto plaintiffs' property).

10. In light of plaintiffs' failure to demonstrate a *prima facie* case that they have suffered any harm as a result of the alleged presence of chemicals or that they are "reasonably certain" to suffer such harm in the future, and in light of the ubiquitous nature of these chemicals in the environment and the fact that they are commonly found in many household products, the alleged incursion of chemicals from the plant can only be regarded as trivial and not constituting a basis for an action in trespass or nuisance.

11. In addition, damage to the plaintiff from the alleged trespass is one of the elements of the tort of trespass. *See Matthews v. Forrest*, 235 N.C. at 283 ("[i]f a plaintiff would recover compensatory damages for a trespass to realty, he must allege facts showing actual damages"). Similarly, a nontrespassory "invasion" of another's property can be considered a nuisance only if it "caused substantial injury." *Pendergrast v. Aiken*, 293 N.C. 201, 236 S.E.2d 787, 798 (1977). Since plaintiffs are unable to show to a reasonable degree of medical certainty that they have been or will likely be injured by the

chemicals at issue, there is no actionable damage and the alleged invasion has not "caused substantial injury."

12. Plaintiffs have failed to show that any of their alleged injuries were caused by exposure to the chemicals at issue. Plaintiffs have also failed to show that they have incurred any cognizable risk of injury in the future from the alleged exposures. In these circumstances, plaintiffs should not be allowed to use the torts of trespass and nuisance to obtain what they cannot obtain through claims based in negligence, gross negligence, and strict liability for ultrahazardous activities.

H. Conclusions of Law on CERCLA Claims

1. Plaintiffs' claims under CERCLA and their citizen suit under RCRA must be considered in the context in which they were brought, *i.e.*, as adjuncts to what is essentially a private tort action. In this regard, the CERCLA and RCRA claims must be considered in light of plaintiffs' failure to adduce admissible evidence of any particular exposure to hazardous substances or hazardous wastes, their failure to demonstrate a *prima facie* case of medical causation or to demonstrate any cognizable increased risk of disease in the future, their failure to demonstrate a *prima facie* case for entitlement to damages for alleged emotional distress, and their failure to demonstrate more than a *de minimis* interference with their alleged property interest. Considering their claims sounding in trespass and nuisance in such light, the claims must be dismissed. As the separate findings of fact and these conclusions of law attempt to illustrate, plaintiffs filed the instant action without adequate investigation, misrepresented the status of this case to the undersigned, and, ultimately have failed to present sufficient evidence to allow any of their common law claims to proceed. Although plaintiffs' CERCLA and RCRA claims must be addressed on their own merits, if any, the court must assure that plaintiffs do not receive from their CERCLA and RCRA claims what they clearly are not entitled to pursuant to the other claims they have presented.

2. Plaintiffs' failure to present admissible evidence of the extent of their alleged exposure to the chemicals at issue, medical causation, and alleged increased risk of disease precludes any action they might have otherwise had under CERCLA for their alleged costs of medical monitoring costs and alternative water supplies. However, as the discussion below demonstrates, plaintiffs have failed in other respects to show any cognizable action under CERCLA.

3. CERCLA--42, United States Code, Sections 9601-9675--was enacted in 1980 to establish a federal program for the cleanup of abandoned or inactive hazardous waste sites. *See generally Allied Corp. v. Acme Solvents Reclaiming, Inc.*, 691 F. Supp. 1100, 1105 (N.D. Ill. 1988). Among other things, CERCLA created a private right of action whereby private parties could, in certain circumstances, conduct cleanup activities and recover the incurred costs from responsible third parties. Thus, Section 107(a)(4)(B) provides that responsible parties are liable for "necessary costs of response incurred by any other person consistent with the national contingency plan." 42 U.S.C. § 9607(a)(4)(B). It is this provision under which plaintiffs apparently seek to recover in Count VI of their complaint.

4. The private cost recovery cause of action created by Section 107 of CERCLA, however, was not intended to serve as a federal toxic tort remedy:

> Congress did not intend for CERCLA, a narrowly drawn federal remedy, to make injured parties whole or to be a general vehicle for toxic tort actions.

Artesian Water Co. v. Government of New Castle County, 659 F. Supp. at 1299-300.[15] Rather, the section allows only for

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[15] *Accord Exxon Corp. v. Hunt*, 475 U.S. 355, 360 (1986) ("Superfund money may not be used to pay for injury to persons or property caused by hazardous wastes"); *Artesian Water Co. v. Government of New Castle County*, 851 F.2d 643, 648 (3rd Cir. 1988) ("the Act was not intended to compensate third parties for damages resulting from hazardous substance

recovery of costs actually incurred in cleaning up a hazardous waste site. *Adams v. Republic Steel Corp.*, 621 F. Supp. at 376. Moreover, as a further limitation on the section's availability, only such cleanup costs may be recovered as were incurred "consistent with the national contingency plan." 42 U.S.C. § 9607(a)(1),(4); *see Ascon Properties, Inc. v. Mobil Oil Co.*, 866 F.2d 1149, 1152-53 (9th Cir. 1989).[16]

5. The National Contingency Plan ("NCP") adopted by EPA details methods of identifying sites where hazardous substances have been released, methods for remedying those releases, and criteria to determine the appropriate extent of response activities. *See* 42 U.S.C. § 9605; 40 C.F.R. Part 300. "The NCP was regarded as a means of assuring that response actions would be both cost-effective and environmentally sound," *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1291 n.42 (citing 126 Cong. Rec. S14,965) (daily ed. Nov. 24, 1980).[17]

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discharge"); *Boone v. Du Bose*, 718 F. Supp. 479 (M.D. La. 1988) (action to recover damages for injuries caused by a hazardous waste site did not arise under CERCLA); *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. 1563, 1582 (E.D. Pa. 1988) ("there is a difference between an action for response costs under CERCLA and an action for damages in tort"); *Wehner v. Syntex Corp.*, 681 F. Supp. 651, 653 (N.D. Cal. 1987) ("[t]he plain language of CERCLA only provides for the cleanup of toxic substances from the environment").

[16] *See also Amland Properties Corp. v. Aluminum Co. of America*, 711 F. Supp. 784, 794 (D.N.J. 1989); *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1277-79.

[17] At the time plaintiffs filed suit, the 1985 version of the NCP was in effect. 50 Fed. Reg. 47911, 47978 (Nov. 20, 1985); 40 C.F.R. §§ 300.1, *et seq.* (1986). EPA adopted revisions to the NCP in 1990, 55 Fed. Reg. 8666-8865 (March 8, 1990). Consistency with the NCP must be determined in light of the NCP in effect at the time the response costs were incurred. *Wickland Oil Terminals v. ASARCO, Inc.*, 792 F.2d 887, 891 (9th Cir. 1986); *NL Industries, Inc. v. Kaplan*, 792 F.2d 896, 898 (9th Cir. 1986); *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1575; *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1294. In this case, the

6. In private CERCLA cost recovery actions, plaintiffs have the burden of proving that the costs they claim to have incurred are necessary, valid and recoverable CERCLA response costs. *Ascon Properties v. Mobil Oil Co.*, 866 F.2d at 1154.[18] "[A] party, before seeking declaratory relief or damages under [section 9607(a)(4)(B)] must 'affirmatively demonstrate that it has incurred necessary costs of response.'" *Chaplin v. Exxon Corp.*, 25 Env't Rep. Cas. (BNA) 2009, 2013 (S.D. Tex. June 10, 1986) (Exhibit A). Moreover, plaintiffs bringing a private action under CERCLA Section 107 must also prove that their response costs are "consistent with the national contingency plan" as an element of their liability case. *Ascon Properties v. Mobil Oil Co.*, 866 F.2d at 1152; *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1574; *New York v. Shore Realty Corp.*, 648 F. Supp. 255, 262 (E.D.N.Y. 1986).[19] In this regard, the courts have held "that the requirements of the NCP

1985 NCP applies to plaintiffs' claimed costs. No different result would obtain, however, under the current NCP.

[18] *See J.V. Peters & Co. v. Administrator, Environmental Protection Agency*, 767 F.2d 263, 266 (6th Cir. 1985); *Amland Properties Corp. v. Aluminum Co. of America*, 711 F. Supp. at 794; *Lykins v. Westinghouse Elec. Corp.*, 27 Env't Rep. Cas. (BNA) 1590, 1593 (E.D. Ky. Feb. 29, 1988) (Exhibit B); *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1277 n.8.

[19] "Congress plainly contemplated that the NCP would be a standard against which response actions would be judged appropriate or inappropriate in the first instance, not merely a limit on the amount of damages recoverable from liable parties." *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1291-92. In *Artesian Water Co.*, the court held that it should "address consistency with the NCP [prior to trial] in order to determine whether [plaintiff] is entitled to recover *any* of its response costs, and to avoid the risk of a pointless trial at some later date." *Id.* at 1292. Where "there is a complete factual record upon which to make the determination of consistency *vel non*, there is nothing to be gained by delaying that determination until trial." *Amland Properties Corp. v. Aluminum Corp. of America*, 711 F. Supp. at 794.

must be adhered to in order to permit a private party to recover its response costs, unless the party seeking recovery explains why a specific requirement is not appropriate to the specific site and problem." *Amland Properties Corp. v. Aluminum Co. of America*, slip op. at 26. *See Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1575 (private plaintiffs must comply with the NCP); 40 C.F.R. § 300.71 (1989), 50 Fed. Reg. 47,934-35 (Nov. 20, 1985) (same).[20]

7. The alleged costs for which plaintiffs seek recovery, if cognizable at all under CERCLA, are "remedial" costs, as that term is used in the statute, because they have admittedly been undertaken for a period in excess of six months. *See Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1576-77 (E.D. Pa. 1988); 40 C.F.R. § 300.65(b)(3) (1985).

8. The NCP in effect when plaintiffs brought their action required that plaintiffs seeking to recover remedial costs must:

> (1) Prepare a remedial investigation/feasibility study ("RI/FS") which includes the results of site investigation, analysis of the release and determination of the threat it poses, evaluation of response actions, screening remedial alternatives, and selection of "a

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[20] *See also BCW Associates Ltd. v. Occidental Chemical Corp.*, Civ. No. 86-5947, 1988 U.S. Dist. LEXIS 11275 (E.D. Pa. Sept. 29, 1988), LEXIS slip op. at 23, n.3 (compliance with NCP required, not only "an inquiry into whether the clean-up was cost efficient and environmentally sound") (Exhibit C); *Jersey City Redevelopment Authority v. PPG Indus.*, 28 Env't Rep. Cas. (BNA) 1873, 1879, n.5 (3rd Cir. Dec. 28, 1988) (courts "required compliance with the NCP in order to recover clean-up costs") (Exhibit D); *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1576 (failure to comply with the detailed substantive and procedural provisions of NCP in remedial actions is a "barrier to recovery of response costs"); *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1291-92 ("Congress plainly contemplated that the NCP would be a standard against which response actions would be judged appropriate or inappropriate in the first instance").

cost-effective remedial alternative that effectively mitigates and minimizes threats to and provides adequate protection of public health and welfare and the environment," 40 C.F.R. § 300.68(d),(i)(1) (1989).[21]

(2) Provide "an opportunity for appropriate public comment concerning the selection of a remedial action." 40 C.F.R. § 300.71 (a)(2)(ii)(D) (1989). The public comment requirement must be consistent with § 300.67 which requires public notice, opportunity for comment, and a public meeting.[22]

(3) Select a cost effective remedy. 40 C.F.R. § 300.68(i)(1) (1989). The NCP defines "cost-effective" as "the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare or the

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[21] *See Amland Properties, Corp. v. Aluminum Co. of America*, 711 F. Supp. at 798 (RI/FS requirement applies to private actions); *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1579 (same); *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1296 (same).

[22] The public comment requirement pertains to all response costs incurred subsequent to February 18, 1986. *Amland Properties Corp. v. Aluminum Co. of America*, 711 F. Supp. at 801; *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. at 1577. *See County Line Investment Co. v. Tinney*, 30 Env't Rep. Cas. (BNA) 1062, 1063 (N.D. Okla. June 16, 1989) (private action barred where no public comment period) (Exhibit E). In *Artesian Water Co. v. Government of New Castle County*, the court noted that plaintiffs' report was the subject of public hearings, but held that since the report was not an RI/FS "[p]ublic comment on a document that does not determine the nature and extent of a hazardous release or evaluate proposed remedies is not consistent with Section 300.67(d)." 659 F. Supp. at 1294-96.

environment." 40 C.F.R. § 300.68(i)(3) (1989).[23]

Each and every one of these requirements must be met to recover private response costs under Section 107.

9. Plaintiffs have not submitted to the court any evidence that their alleged response costs were undertaken in compliance with the requirements of the National Contingency Plan. This failure requires the court to dismiss the CERCLA claims.

10. Instead of showing evidence of compliance with the NCP's requirements for remedial actions, plaintiffs argued to the court that their alleged response activities were "removal" actions, as defined by the statute. Even if this were so (contrary to the conclusions of law set forth above) plaintiffs still must, as a necessary element of their CERCLA cause of action, demonstrate consistency with the NCP. The NCP requires, *inter alia*, a preliminary assessment identifying the cause and nature of the release, a determination of the appropriateness of alternative removal actions, and termination of the assessment if the party allegedly responsible for the release is taking the appropriate response. 40 C.F.R. § 300.65(b)(5); *see* 40 C.F.R. § 300.71(a)(2)(ii). Again, plaintiffs' failure to offer evidence of compliance with these NCP provisions requires this court to dismiss the CERCLA claims.

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[23] The cost-effectiveness determination includes evaluation of whether a measure "is necessary." *United States v. Northeastern Pharmaceutical and Chemical Co.*, 810 F.2d 726, 748 (8th Cir. 1986), *cert. denied*, 484 U.S. 848 (1987). *See Jersey City Redevelopment Authority v. PPG Industries, Inc.*, 28 Env't Rep. Cas. at 1877 (no recovery for disposal of relatively uncontaminated soil at hazardous waste site because it would have been "practical, feasible and cost-effective to segregate [the] soil"); *United States v. Northernaire Plating Co.*, 685 F. Supp. 1410, 1415 (W.D. Mich. 1988) (cost effectiveness discussed in government response action); *Lone Pine Steering Comm. v. United States E.P.A.*, 600 F. Supp. 1487, 1499 (D.N.J.), *aff'd*, 777 F.2d 882 (3rd Cir. 1985), *cert. denied*, 476 U.S. 1115 (1986) (plaintiffs must analyze "relative cost and means of assuring that remedial measures are cost effective").

11. In addition, the costs for which plaintiffs actually seek recovery are not cognizable under CERCLA. Plaintiffs claim they are entitled to recover medical testing and surveillance costs. As their papers make clear, plaintiffs are seeking the costs, *inter alia*, of the testing they have undergone by their expert witnesses in this case and for the future medical monitoring to which they claim entitlement. This claim is defective as a matter of law because medical costs are not "costs of response" but, rather, traditional tort damages, which are not available under CERCLA. Indeed, Congress explicitly considered and rejected allowing recovery of such expenses in Section 107. Thus, the original House bill would have allowed recovery for "loss due to personal injury . . . including . . . . all out of pocket medical expenses."[24] These provisions, however, were rejected in the final bill. As Senator Randolph noted, "[w]e have deleted the Federal cause of action for medical expenses or property or income loss." 126 Cong. Rec. S14964 (daily ed. Nov. 24, 1980), *reprinted in* 1 Legis. Hist. 685; *see* 126 Cong. Rec. H11791 (daily ed. Dec. 3, 1980), *reprinted in* 1 Legis. Hist. 787 (remarks of representative Broyhill) ("[c]ompensation for personal injury has not been included").[25] Thus, "Congress in enacting CERCLA clearly manifested an intent not to provide compensation for economic losses or for personal injury result-

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[24] S.1480, 96th Cong., 2d Sess. §§ 4(a)(2)(A)-(G), *reprinted in* 1 Legislative History of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Superfund), Pub. L. 96-510, Committee on Environmental and Public Works, U.S. Senate ("Legis. Hist.") (Exhibit G) 462, 485-88; *see* H.R. 7020, 96th Cong., 2d Sess. § 3071(b), *reprinted in* 2 Legis. Hist. 3, 40 (liability included "all damages for personal injury").

[25] *See also* Superfund Section 301(E) Study Group, *Injuries and Damages from Hazardous Wastes--Analysis and Improvement of Legal Remedies*, Serial No. 97-12, printed for the use of the Senate Committee on Environment and Public Works, 97th Cong., 2d Sess. (Sept. 1982), Part I at 59 (CERCLA does "not provide benefits to individuals for personal injury or for property damage or loss") (Exhibit H).

ing from the release of hazardous substances." *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. at 1285.

12. For that reason, the courts have routinely rejected claims for medical expenses such as those presented by plaintiffs here. *See, e.g., Coburn v. Sun Chemical Corp.*, No. 88-0120 (E.D. Pa. Nov. 9, 1988), slip op. at 13 (holding that response and removal actions relate to "only the clean-up of toxic substances from the environment, and do not allow recovery of medical costs") (Exhibit I); *Lutz v. Chromatex, Inc.*, 718 F. Supp. 413, 418 (M.D. Pa. 1989) (rejecting recovery for medical costs and adopting *Coburn* rationale); *Wehner v. Syntex Corp.*, 681 F. Supp. at 653 (CERCLA "provides for the removal and clean-up of hazardous waste from the environment. It does not address monitoring of individuals for personal health reasons"); *Chaplin v. Exxon Corp.*, 25 Env't Rep. Cas. at 2011 (medical detection monitoring costs are "not the type of cost recovery contemplated by Congress in the enacted statute").[26] In addition, even if medical costs were recoverable, they could be recovered only if plaintiffs could demonstrate that they were necessary and consistent with the NCP. In light of the rulings on Litton's other motions for summary judgment, plaintiffs cannot demonstrate that any such costs were either necessary or consistent with the NCP.

13. In addition, private parties may not recover investigative costs, such as groundwater and soil sampling, until they actually undertake cleanup efforts or unless they intend to

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[26] In further support of this conclusion, the courts have noted that Congress explicitly established the Agency for Toxic Substances and Disease Registry to undertake medical testing and collection of information in certain circumstances. 42 U.S.C. § 9604(i); *Coburn v. Sun Chemical Corp.*, slip op. at 13; *Chaplin v. Exxon Corp.*, 25 Env't Rep. Cas. at 2012. "Such medical testing costs clearly differ from either the response costs or the clean-up costs allowed in section 9607." *Chaplin v. Exxon Corp.*, 25 Env't Rep. Cas. at 2012. "Certainly, when Congress wanted to provide for medical care and testing, it knew how to do so in explicit language." *Coburn*, slip op. at 14.

undertake a cleanup. "By its terms, CERCLA makes no provision for investigatory cost recovery." *Thompson v. Andersen Window Corp.*, Civ. No. 4-88-229 (D. Minn. 1989) (Exhibit J), LEXIS op. at 5. In *Bulk Distribution Centers, Inc. v. Monsanto Co.*, 589 F. Supp. 1437, 1451-52 (S.D. Fla. 1984), the court held that investigatory costs incurred prior to actually undertaking cleanup efforts were not "response" costs and hence not recoverable. *See also Environmental Defense Fund v. Lamphier*, 12 Envtl. Law. Rep. 20843 (E.D. Va. May 14, 1983), *aff'd on other grounds*, 714 F.2d 331 (4th Cir. 1983) (investigatory costs are not response costs recoverable under CERCLA) (Exhibit K). Even if investigation costs are recoverable under some circumstances, the investigation must be in contemplation of cleaning up a site. *Thompson v. Andersen Window Corp.*, LEXIS slip op. at 7. Plaintiffs in this case have neither undertaken any "cleanup actions," nor expressed any intention of doing so. Consequently, they have no right to recover testing costs under Section 107.

14. In addition, plaintiffs have not incurred any cognizable alternative water supply costs. Instead, their interrogatory answers make clear that they seek only mileage costs for driving to their relatives' houses and, as part of their visits, obtaining bottled water. Plaintiffs' Response to Second Set of Interrogatories, at para. 5(c) (Exhibit F). Congress did not intend to include such attenuated costs as "necessary costs of response" under CERCLA. Again, even if such costs could be recoverable under CERCLA in some circumstances, plaintiffs have not demonstrated, as shown by the rulings on Litton's other motions for summary judgment, that any such costs were necessary or consistent with the NCP.

15. In the Complaint, plaintiffs generally seek recovery for property damages, lost rental income, and lost wages. Complaint paras. 17, 18. It is not clear, however, whether plaintiffs seek recovery of these alleged damages in their CERCLA count, because their briefs do not address the issue. Such claims could

not succeed in any event. As the Supreme Court has made clear, "Superfund money [is not] available to compensate private parties for economic harms that result from discharge of hazardous substances." *Exxon Corp. v. Hunt*, 475 U.S. 355, 359 (1986). *Accord Artesian Water Co. v. Government of New Castle County*, 851 F.2d 643, 648-49 (3rd Cir. 1988) (no CERCLA reimbursement for property or income loss); *Thompson v. Andersen Window Corp.*, LEXIS slip op. at 8 (economic losses and diminished property value are not compensable under CERCLA); *Piccolini v. Simons Wrecking*, 686 F. Supp. 1063, 1068 (M.D. Pa. 1988) (no recovery for damages for diminution in property value and lost income); *Wehner v. Syntex Corp.*, 681 F. Supp. at 653 (CERCLA does not allow recovery for "[e]conomic damages for loss of property," including lost value of a home); *Allied Towing Corp. v. Great Eastern Petroleum Corp.*, 642 F. Supp. 1339, 1348 (E.D. Va. 1986) (dismissing a private plaintiff's claim for "economic and consequential damage to its business").[27]

16. Plaintiffs' claim for attorneys' fees under CERCLA is defective since plaintiffs cannot prevail otherwise on their CERCLA claim. Moreover, as a matter of law, Congress did not intend that private plaintiffs would recover attorneys' fees or costs of litigation under CERCLA. *T & E Industries, Inc. v. Safety Light Corp.*, 680 F. Supp. 696, 707 (D.N.J. 1988). The court in *T & E* noted that CERCLA enables only the government to recover attorneys' fees. *Id.* at 707-08. "This Court can find no analogous portion of the statute which would entitle a private party to recover for legal action taken and refuses to create a right to recovery of attorney fees where Congress has not

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[27] The original CERCLA bill would have allowed recovery for economic loss. *See* S.1480, 96th Cong., 2d Sess. §§ 4(a)(2)(A)-(G); H.R. 7020, 96th Cong., 2d Sess. § 3071(b). This provision also was rejected in the final legislation. As noted above, Senator Randolph stated that "[w]e have deleted the Federal cause of action for . . . income loss." 126 Cong. Rec. S14964 (daily ed. Nov. 24, 1980).

expressly stated such to exist." *Id.* at 708; *see Alyeska Pipeline Service Co. v. Wilderness Soc.*, 421 U.S. 240, 247 (1975) (a prevailing party is not entitled to attorney's fees unless provided by statute). Plaintiffs, therefore, are not entitled to recover attorney's fees as CERCLA response costs. *See United States v. Hardage*, No. CIV-86-1401-P (W.D. Okla. August 9, 1990), slip op. at 121-22 (Att. 80); *Fallowfield Development Corp. v. Strunk*, 1990 U.S. Dist. LEXIS 4820 (E.D.Pa. April 23, 1990), slip op. at 7-8; *Regan v. Cherry Corp.*, 706 F. Supp. 145, 149 (D.R.I. 1989); *In re Hemingway Transport, Inc.*, 108 Bankr. 378, 383 (BC DC Mass. 1989).[28]

I. Conclusions of Law on RCRA

1. "The right of private citizens to institute civil litigation under RCRA [section 7002(a)] is strictly limited by the jurisdictional prerequisites contained in section 7002[b], 42 U.S.C. § 6972(b)." *McGregor v. Industrial Excess Landfill, Inc.*, 709 F. Supp. at 1407; *accord Garcia v. Cecos International, Inc.*, 761 F.2d 76, 78 (1st Cir. 1985) (courts must apply these statutory limits strictly). RCRA section 7002(b) bars citizen suits unless plaintiffs can show that (a) they have given proper prior notice, (b) EPA is not already taking appropriate

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[28] The so-called contrary authority cited by plaintiffs should be rejected. In *General Electric Co. v. Litton Business Systems, Inc.*, 715 F. Supp. 949 (W.D. Mo. 1989), *appeal pending*, No. 89-2845 WM (8th Cir.), the court granted attorneys' fees on the basis of what it described as specific statutory authority for the award. *Id.* at 959. The court failed however, to identify the section it was referring to; thus, it is possible that the court mistakenly based its award on Section 310(f), not Section 107. (Section 301(f) is not in issue here because plaintiffs have disavowed their reliance upon Section 301, the citizen suit provisions of CERCLA.) This deficiency has led both courts that have subsequently addressed the issue to dismiss the *General Electric* decision as ill-founded. *Fallowfield Development Corp. v. Strunk, supra*, slip op. at 7; *In re Hemingway Transport, Inc.*, 108 Bankr. at 383. Similarly, the award approved in *Jersey City Redevelopment Authority v. PPG Indus., Inc., supra*, appears from the opinion to have been based on the fee provision of Section 310(f). *See id.* at 1878. The opinion thus does not hold that attorneys' fees are recoverable response costs under Section 107.

remedial actions at the site, and (c) the RCRA violation is continuing. Plaintiffs can meet none of these jurisdictional prerequisites.

2. RCRA section 7002(b) requires that plaintiffs give adequate notice of RCRA claims to potential defendants, the EPA and the State. 42 U.S.C. § 6972(b). Compliance with RCRA's prior notice requirement is jurisdictional. *Hallstrom v. Tillamook County*, ___ U.S. ___, 110 S. Ct. 304, 107 L. Ed. 2d 237, 246 (1989). *See also Ascon Properties, Inc. v. Mobil Oil Co.*, 866 F.2d at 1160 (90-day notice requirement for Section 7002(a)(1)(B) claim is jurisdictional and mandatory); *McGregor v. Industrial Excess Landfill, Inc.*, 856 F.2d 39, 43 (6th Cir. 1988) (compliance with 90-day notice requirement must be alleged in any complaint brought under Section 7002(a)(1)(B)); *Garcia v. Cecos International, Inc.*, 761 F.2d at 78 (60-day notice requirement of Section 7002(a)(1)(A) claim alleging non-subchapter III violations is jurisdictional); *Roe v. Wert*, 706 F. Supp. 788, 794-95 (W.D. Okla. 1989) (failure to give prior notice bars claim under Section 7002(a)(1)(A) for alleged subchapter III violation); *Thompson v. Andersen Window Corp.*, Civ. No. 4-88-229 (D. Minn. Jan. 27, 1989) (Exhibit F), LEXIS slip op. at 8-9 (RCRA claims dismissed with prejudice where plaintiff failed to give required notice).

3. The EPA regulations implementing RCRA Section 7002(b) require:

> Notice regarding an alleged violation . . . under this Act shall include sufficient information to permit the recipient to identify the specific permit, standard, regulation, condition, requirement, or order which has allegedly been violated, the activity alleged to constitute a violation, the person or persons responsible for the alleged violation, the date or dates of the violation and the full name, address, and telephone number of the person giving notice.

40 C.F.R. § 254.3(a).

4. The notice letter that plaintiffs purported to send to Litton was deficient under the notice letter requirements of 40, Code of Federal Regulations, Section 254.3(a) for several reasons. First, it failed to identify the *specific* RCRA provisions and implementing regulations that plaintiffs allege Litton violated. The letter cited one broad provision of RCRA, "42 U.S.C. § 6925", which Litton allegedly violated by "disposal of hazardous waste into the ground at the Clifton facility without authorization in a permit." Section 6925, however, contains numerous requirements relating to hazardous waste. Plaintiffs' letter did not specify which of these many requirements Litton allegedly violated. Similarly, plaintiffs' letter asserted that Litton violated 40, Code of Federal Regulations, Section 270.10, "General Application Requirements," which establishes numerous specific requirements pertaining to hazardous waste permits. Again, the letter did not identify the specific regulatory requirement that Litton allegedly violated, as 40, Code of Federal Regulations, Section 254.3(a) requires. Plaintiffs' letter also alleged that Litton violated 40, Code of Federal Regulations, Section 265.31 by "[m]aintaining and operating hazardous waste facilities in such a manner as to cause releases of hazardous waste into groundwater . . . ." The cited rule simply requires facilities to be "maintained and operated to *minimize the possibility* of . . . any unplanned sudden or non-sudden release of hazardous waste . . . to air, soil, or surface water which could threaten human health or the environment." (Emphasis added.) Thus, an alleged release of a hazardous waste does not necessarily violate the RCRA regulation cited in plaintiffs' notice letter. The allegation thus fails in this respect as well to comply with 40, Code of Federal Regulations, Section 254.3. In addition, 40, Code of Federal Regulations, Section 254.3 requires that notices of intent to file citizen suits under RCRA section 7002 contain the "date or dates of the violation". Plain-

tiffs' purported notice letter did not include this information for any of the alleged violations.

5. Considered collectively, these violations of the notice requirements compel the conclusion that plaintiffs' "notice letter" did not satisfy Section 7002(b)(1). Since the only notice that plaintiffs gave prior to filing suit was inadequate, the court lacks subject matter jurisdiction for the RCRA claim and must dismiss the claim.

6. In addition to prohibiting citizen suits in the absence of adequate prior notice, Congress also made clear that citizen suits could not be brought where the state or federal government is already undertaking remedial actions at a facility. Thus, RCRA prohibits citizen suits brought under Section 7002(a)(1)(A) "if the [EPA] Administrator or the State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance with such permit, standard, regulation, condition, requirement, prohibition or order." 42 U.S.C. § 6972(b)(1)(B). Similarly, RCRA Section 7002(b)(2)(B) precludes citizen suits brought under Section 7002(a)(1)(B) where EPA "has obtained a court order (including a consent decree) . . . pursuant to which a responsible party is diligently conducting a removal action, Remedial Investigation and Feasibility Study (RIFS), or proceeding with a remedial action." 42 U.S.C. § 6972(b)(2)(B)(iv). *See O'Leary v. Moyer's Landfill, Inc.*, 677 F. Supp. at 819 (citizen suit barred where EPA was diligently pursuing cleanup at site).

7. "The congressional intent in enacting these restrictions on private actions was to prevent multiple and numerous instances of litigation involving private citizens, the states and the federal government. . . Only when the federal and state governments fail to act to remedy the situation or file suit in either State or federal courts due to inadequate public resources did Congress envision the need for private citizens to commence actions to correct environmental hazards." *McGregor v. Indus-*

trial Excess Landfill, Inc., 709 F. Supp. at 1407. Moreover, Congress did not want citizen suits to interfere with ongoing EPA-supervised remedial actions. *See Utah State Department of Health v. Ng*, 649 F. Supp. 1102, 1108-09 (D. Utah 1986) (Congress intended to allow EPA to proceed with cleanup activities uninhibited by private party interference).

8. Plaintiffs claim that, under a literal reading of the statute, they cannot be precluded from pursuing a citizens suit under RCRA unless suit has actually been filed in court by EPA. This argument is contrary to common sense and not compelled by the statute. The Administrative Consent Order that Litton signed is the equivalent of a judicial action because it is expressly enforceable in federal court at the discretion of EPA. Accepting plaintiffs' argument would mean that a company would be protected from citizen suits under RCRA if it resisted EPA's efforts to obtain voluntary compliance with closure requirements and thereby forced EPA to bring it into court, but would not be protected from citizen suits if it did as Litton has done and cooperated voluntarily. Rather than encouraging parties to take responsibility for chemicals on their property and to remediate releases, therefore, plaintiffs' interpretation of RCRA would encourage companies to defy cleanup orders and litigate every conceivable issue. Such a result would be contrary to public policy. *See, e.g., Perry v. Commerce Loan Co.*, 383 U.S. 392, 400 (1966) (statute should be construed to avoid absurd or unintended results); *Church of the Holy Trinity v. United States*, 143 U.S. 457, 461 (1892) (same); *United States v. Kirby*, 74 U.S. (7 Wall.) 482, 486-87 (1869) (same); *Chafin v. United States*, 5 F.2d 592, 592 (4th Cir.), *cert. denied*, 269 U.S. 552 (1925) (same); *United States v. Mendoza*, 565 F.2d 1285, 1288-89 (5th Cir. 1978) (same).

9. This is the type of case in which Congress intended to prevent citizen interference. The United States and Litton have entered into a detailed consent order requiring actions which will

remediate any threats to human health or the environment at the Litton site. The consent order is by its terms enforceable in federal court. *See* Consent Order at para. XX(3). Plaintiffs have provided no evidence to the Court of any alleged failure on Litton's part to comply with that order and, indeed, have disclaimed any such intention.[29] Therefore, the jurisdictional provisions of RCRA Section 7002(b) bar plaintiffs' RCRA claims.

10. In addition, RCRA Section 7002(a)(1)(A), 42, United States Code, Section 6972(a)(1)(A), permits only those actions "against any person . . . who is alleged *to be in violation* of any permit, standard, regulation, condition, requirement, prohibition, or order . . . ." (Emphasis added.) Thus, the section allows a claim only where the alleged violation is a continuing one. *Coburn v. Sun Chemical*, No. 88-920 (E.D. Pa. Nov. 9, 1988), slip op. at 21 (holding that "section 7002(a)(1)(A) of RCRA bars any suit based on 'wholly past' violations of RCRA"); *accord McClellan Ecological Seepage Situation (MESS) v. Weinberger*, 707 F. Supp. 1182, 1187 (E.D. Cal. 1988) (RCRA is "forward looking [and] intended to remedy present and future harmful impacts, not conduct that has occurred entirely in the past and cannot be reasonably expected to result in future harm"); *see also Ascon Properties, Inc. v. Mobil Oil Co.*, 866 F.2d at 1159 (section 7002(a)(1)(A) does not impose retroactive liability and requires current violation).

11. In *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49 (1987), the Supreme Court held that the nearly identical provisions of the Clean Water Act permit suits only where present and future violations are alleged. Indeed, the court identified the citizen suit provision of RCRA as one of several environmental statutes that "authorize only prospective relief." *Id.* at 57, n.2. *See Pawtuxet Cove Marina,*

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[29] Plaintiffs do not claim that Litton failed to comply with any corrective action order, nor do they contend that EPA has not been diligent in supervising the remedial action at Litton's property. Plaintiffs' Response to Second Set of Interrogatories at paras. 1(i) and 7.

Inc. v. Ciba-Geigy Corp., 807 F.2d 1089, 1094 (1st Cir. 1986) (no Clean Water Act permit violation where "no reasonable likelihood that defendant's alleged infractions would continue").

12. Although the Complaint alleges that Litton's purported RCRA violations are "continuing," plaintiffs' discovery responses did not set forth the alleged basis for such violation upon which plaintiffs now seek to rely. Thus, plaintiffs now contend that they have alleged a "continuing" violation of RCRA because the mere presence of TCE and other substances in the soil around the plant constitutes "disposal" today within the meaning of RCRA, for which an RCRA permit is allegedly required. However, plaintiffs represented to Litton in their discovery responses that "disposal" of hazardous wastes, as defined by RCRA, stopped in 1986. *See* Plaintiffs' Response to Second Set of Interrogatories at para. 1(c) (no allegation of disposal of hazardous waste after 1986). If it was plaintiffs' position that a present RCRA violation is continuing because the mere presence of hazardous wastes in the soil at the plant constitutes a "disposal," that position should have been set forth in their interrogatory responses.

13. Plaintiffs' claim has no merit in any event. Although plaintiffs cite other interrogatory responses indicating that they contend that Litton is in "continuing" violation of RCRA because of its alleged failure to obtain an RCRA permit for the facility, it is undisputed that Litton does not presently operate a hazardous waste treatment, storage or disposal facility subject to RCRA.[30] It need not obtain (indeed, could not obtain) an RCRA TSD permit or comply with regulatory requirements imposed on a TSD facility. There is no possibility of present or future RCRA violations. Accordingly, this case is analogous to

[30] As noted earlier, the plant's process wastewater is treated and discharged under a permit issued under the Clean Water Act. Such permits are excluded from RCRA coverage. RCRA § 1004(27), 42 U.S.C. § 6903(27); 40 C.F.R. § 261.4(2) (1988).

Chaplin v. Exxon Corp., 25 Env't Rep. Cas. (BNA) 2009, 2015 (S.D. Tex. June 10, 1986), in which the court held that where the "only allegations as to ongoing activities are personal injuries and property damage [they] are not sufficient to show a continuing violation itself." Because no continuing violation exists, the court has no jurisdiction over the RCRA claim.

14. Even if the court were to determine that it had jurisdiction over plaintiffs' RCRA claims, the undersigned believes that it should nevertheless dismiss those claims under the doctrine of primary jurisdiction. Under that doctrine, courts will not consider the merits of a private action which squarely presents technical or policy determinations that the agency concerned has under review. *Parola v. Weinberger*, 848 F.2d 956, 959 (9th Cir. 1988). "The doctrine is applied to promote uniformity of regulation and allow courts to benefit from an agency's specialized knowledge." *Id.* The doctrine "arises in cases raising issues of fact outside the conventional experience of judges or requiring the exercise of administrative discretion." *United States v. Environmental Waste Control, Inc.*, 698 F. Supp. 1422, 1439 (N.D. Ind. 1988) (citing *Far East Conference v. United States*, 342 U.S. 570, 574 (1952)).[31] *Accord O'Leary v. Moyer's Landfill, Inc.*, 677 F. Supp. at 820-21 (deferring

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[31] *See Nader v. Allegheny Airlines, Inc.*, 426 U.S. 290, 303-04 (1976) (primary jurisdiction applies where there are technical questions uniquely within expertise of administrative agency); *Hansen v. Norfolk & Western R. Co.*, 689 F.2d 707, 710-11 (7th Cir. 1982) (court referred complex transportation policy issues to Interstate Commerce Commission); *Mississippi Power & Light Co. v. United Gas Pipe Line Co.*, 532 F.2d 412, 417-20 (5th Cir. 1976) (court deferred to agency to determine complex energy issues which agency was already considering); *Ryan v. Chem-Lawn*, No. 88-C-6788, Slip op. (N.D. Ill. Feb. 6, 1989) (court deferred to agency to determine technical issue of pesticide safety) (Exhibit J); *In re "Agent Orange" Product Liability Litigation*, 475 F. Supp. 928, 931-33 (E.D.N.Y. 1979) (court deferred to EPA to determine whether to ban herbicide); *United States v. Virginia Elec. & Power Co.*, 412 F. Supp. 165, 168-70 (E.D.N.C. 1976) (court deferred to agency to determine whether course of conduct violated law).

issues concerning implementation and funding of remedy under RCRA to primary jurisdiction of agency).

15. The facts in this case favor the exercise of primary jurisdiction. First, plaintiffs have failed to show any evidence of the presence of chemicals on their property at levels sufficient to cause harm to human health. Second, EPA is currently supervising Litton's remedial investigation at the site and will make the technical determination of what remedial actions need to be taken. Litton is acting under a judicially enforceable Consent Order, and plaintiffs do not argue that Litton has failed to comply with the Consent Order or that the Consent Order is insufficient. Third, the two factors courts usually consider, *i.e.*, current agency involvement and technical and complex issues, support the exercise of primary jurisdiction in this case. Accordingly, even if the court had jurisdiction to consider plaintiffs' RCRA claims, it should dismiss those claims under the primary jurisdiction doctrine.

J. Additional Conclusions of Law

The motion of plaintiffs Sandra Hancock and Chuck Hancock for voluntary dismissal should be denied, for the reasons previously set forth by the undersigned upon plaintiffs' motions for voluntary dismissal and by the district court upon consideration of plaintiffs' objections to the undersigned's recommended denials of such motions.

K. Sanctions

Rule 11, Federal Rules of Civil Procedure, provides:

> The signature of an attorney or party constitutes a certificate by the signer . . .; that to the best of the signer's knowledge, information, and belief formed after reasonable inquiry it is well grounded in fact . . . . If a pleading is signed in violation of this rule, the court, upon motion or its own initiative, shall impose

> upon the person who signed it, a represented party, or both, an appropriate sanction . . . .

While it is within the sound discretion of the district court judge to impose sanctions, the undersigned feels obligated to inform the district court that lead counsel for plaintiffs has engaged in conduct which appears sanctionable. As more fully discussed *supra* and in the proposed findings, lead counsel for plaintiffs admittedly filed this matter without conducting adequate inquiry. Sanctions are appropriate where counsel fails to make a reasonable inquiry into the facts before filing papers with the court. *Pantry Queen Foods, Inc. v. Lifschultz Fast Freight, Inc.*, 809 F.2d 451, 453 (7th Cir. 1987). It is apparent from admissions made by plaintiffs' counsel to the undersigned in open court that lead counsel for plaintiffs failed to comply with Rule 11, Federal Rules of Civil Procedure, in initiating this action. It is equally apparent that plaintiffs' failure to comply with Rule 11 compelled Litton to expend unduly tremendous resources. As discussed *supra*, other conduct may also be sanctionable.

In *Blue v. Harris*, ___ F.2d ___, No. 88-1364 (4th Cir. Sept. 18, 1990), the Court of Appeals for the Fourth Circuit recently held:

> In awarding sanctions, a district court has the discretion to consider a broad range of factors. Even though an attorney has engaged in conduct which is otherwise sanctionable, "a district court should reflect upon equitable considerations in determining the amount of the sanction."

Id., at 46 (citation omitted). In order to serve the ends of justice, the undersigned will recommend that the district court conduct a Rule 11 inquiry based on Litton's motions for sanctions.

SUBMISSION

IT IS, THEREFORE, RESPECTFULLY SUBMITTED that these recommended Conclusions of law, as incorporated in the Memorandum and Recommendation, Part III, filed simultaneously herewith, be accepted by the district court.

The parties are hereby advised that, pursuant to 28, United States Code, Section 636(b)(1)(C), written objections to the conclusions of law contained herein and the findings of fact set forth in a separate document entered simultaneously herewith and incorporated by reference, must be filed within ten (10) days of service of same. Failure to file such objections with the district court will preclude the parties form raising such objections on appeal. *Thomas v. Arn*, 474 U.S. 140 (1985), *reh'g denied*, 474 U.S. 1111 (1986); *United States v. Schronce*, 727 F.2d 91 (4th Cir.), *cert. denied*, 467 U.S. 1208 (1984).

These recommended Conslusions of Law are entered in response to the motions noted in the Findings of Fact, Part I.

Respectfully submitted, this, the 29th day of October, 1990.

/s/ J. Toliver Davis
J. TOLIVER DAVIS
UNITED STATES
MAGISTRATE

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
BRYSON CITY DIVISION
B-C-88-253

MARTHA CARROLL, JAMES CARROLL;
ROSETTA EDWINA ROGERS; JAMES CARROLL, JR.;
KEITH S. GENTLE; BELINDA GADDIS,
individually and as next friend and parent of
Justin Gaddis, and Derrick Gaddis, both minors;
RANDY GADDIS, individually and as next friend and
parent of Justin Gaddis, and Derrick Gaddis, both minors;
FRED ALLEN CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
DEBBIE CHAMBERS, individually and
as next friend and parent of Rusty Chambers, a minor;
BARBARA MESSER; ANCY SIMONDS, individually
and as next friend and parent of Chuck Hancock, a minor;
JAMES R. MESSER, individually and as next friend
and parent of Jonathan Messer, a minor;
MELANIE MESSER, individually and as next friend and
parent of Jonathan Messer; and ANN CARROLL,
Plaintiffs,

v.

LITTON SYSTEMS, INC., a Delaware Corporation
through its Agent for Service of Process:
C.T. CORPORATE SYSTEM,
Defendant.

FILED
OCT 29, 1990
ASHEVILLE, N.C.
U.S. DISTRICT COURT
W. DISTRICT OF N.C.

MEMORANDUM
AND
RECOMMENDATION,
PART III

PURSUANT TO 28, UNITED STATES CODE, SECTION 636(b) and the standing Orders of Designation entered by United States District Judge Richard L. Voorhees, the undersigned United States Magistrate has before him a variety of dispositive motions filed by Defendant Litton Systems, Inc. ("Litton"). Having thoroughly reviewed these motions, plaintiffs' oppositions, the affidavits and other materials submitted both in support of and in opposition to said motions, and the record in this case, and having heard oral argument, the undersigned will recommend to the district court that it grant the following motions filed by Litton:

(1) Motion in Limine to Exclude Opinion Testimony Concerning Plaintiffs' Alleged Past Exposure to the Chemicals in Issue ("Motion to Exclude");

(2) Motion for Summary Judgment on Medical Causation ("Motion on Causation");

(3) Motion for Summary Judgment on Alleged Increased Risk of Disease ("Motion on Increased Risk");

(4) Motion for Summary Judgment on Emotional Distress Claims ("Motion on Distress");

(5) Motion for Summary Judgment on Claims of Nuisance and Trespass ("Motion on Nuisance");

(6) Motion for Summary Judgment on Plaintiffs' CERCLA Cost Recovery Claim ("Motion on CERCLA"); and

(7) Motion for Summary Judgment on Plaintiffs' RCRA Claim ("Motion on RCRA").

As a preliminary matter, the undersigned has also determined to recommend denial of plaintiffs' Motion to Strike From the Record Materials Submitted by the Defendant in Support of Defendants' Motion for Summary Judgment and for Sanctions Against the Defendant ("Motion to Strike").

In addition, the undersigned has determined to recommend that the following motions be denied as moot:

(1) Plaintiffs' Motion for Partial Summary Judgment;

(2) Plaintiffs' Motion to Rejoin Litton Industries, Inc. as a Party Defendant and for Sanctions ("Motion to Rejoin"); and

(3) Litton's Motion to Deem Admitted Facts Set Forth in Requests for Admission, or Alternatively, To Determine Sufficiency of Objections ("Motion to Deem Admitted").

Finally, the undersigned will recommend to the district court that the Motion of Plaintiff Sandra Hancock, Individually, and as Next Friend and Parent of Chuck Hancock, a Minor, For Voluntary Dismissal ("Hancock Motion") be denied on the merits and that the district court consider whether sanctions should be imposed.

The undersigned has prepared detailed recommended findings of fact and conclusions of law, in two parts, which are incorporated herein by reference. Having considered the motions listed *supra*, conducted a hearing, reviewed the submis-

sions of the parties, made recommended findings of fact and conclusions of law, the undersigned respectfully submits the following Memorandum and Recommendation.

MEMORANDUM

I. INTRODUCTORY FACTS

This case involves Litton's alleged liability for the release of certain chemicals from its Clifton Precision plant in Murphy, North Carolina ("the plant"). Plaintiffs are individuals who either lived, worked, or visited near the plant for various periods from 1969 to 1987.

In late 1986, Litton detected the presence of chemicals in the industrial well servicing its plant. Shortly thereafter, it also discovered that trace levels of similar chemicals were present in certain private wells near the plant. The principal chemical found--and the main chemical at issue in this litigation--is trichloroethylene ("TCE"), which the plant used as a degreasing solvent from its construction in 1967 until about 1974.[1] The

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[1] Although not necessary to this opinion, it bears noting that evidentiary materials submitted by Litton and not disputed by plaintiffs show that the chemicals found in plaintiffs' wells are neither unusual nor unique to Litton. Instead, they are ubiquitous. For example, EPA's Health Advisory for Trichloroethylene noted that 200 million pounds had been manufactured in 1982 alone and that "TCE occurs widely in the environment." *See* Attachment 41. (All references to Attachments are to the Appendix of Attachments in Support of Litton System, Inc.'s Motions for Summary Judgment on Medical Causation, Etc.) Over the years, millions of tons of TCE have been used annually in this country for a variety of purposes, including degreasing. TCE has also been widely used in medicine as a general anaesthetic and self-administered analgesic. An EPA survey of household products in 1987 showed that about half of 1,026 common household products contain measurable amounts of chlorinated solvents such as TCE, 1,1,1-trichloroethane, and methylene chloride. EPA Office of Pesticides and Toxic Substances, Household Solvent Products: A "Shelf" Survey with Laboratory Analysis, at xi-xii (Attachment 42) (product categories with high percentages of chlorinated organic compounds included brake cleaners, suede protectors, VCR

average concentration of TCE found in plaintiffs' wells since early 1987 has been less than 20 parts per billion ("ppb"), with measured concentrations ranging from zero to 84 ppb. *See* Findings of Fact at para. 66.

After detecting TCE in the groundwater, Litton promptly implemented a variety of remedial measures, including initially providing bottled water to the individuals whose wells contained trace levels of chemicals and later installing and maintaining carbon adsorption filters on these wells. In addition, Litton entered into an administrative consent order with the United States Environmental Protection Agency ("EPA") under which longer term remedial actions have been undertaken and continue at the plant site today. *See* Findings of Fact at para. 250.

Litton denies that any of the chemicals found in plaintiffs' wells came from the plant. Rather, it contends that it would have been hydrogeologically impossible for the chemicals to have moved from Litton's property to plaintiffs' wells. Between the plant and all but one of those wells flows Slow Creek, which Litton alleges serves as a hydrogeological barrier to groundwater flow. The noted motions, however, do not require resolution of this question. Accordingly, solely for the purpose of deciding Litton's motions, the undersigned has assumed that the plant *was* the source. Nevertheless, the undersigned has determined that summary judgment must be granted to Litton on all claims regardless of where the chemicals originated.

II. PROCEDURAL HISTORY OF THIS CASE

In October 1988, plaintiffs filed suit alleging claims for personal injury, property damage, out-of-pocket expenses, and injunctive relief. Counts I through V are state common-law counts sounding in negligence (I), gross negligence (II), strict liability for ultrahazardous activities (III), nuisance (IV), and

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cleaners, paint removers, water repellents, aerosol spray paints, and adhesive removers).

trespass (V). Count VI asserts a claim for the recovery of "response costs" under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42, United States Code, Sections 9601, *et seq*. Count VII asserts a claim under the Resource Conservation and Recovery Act ("RCRA"), 42, United States Code, Sections 6901, *et seq*. Twenty-four plaintiffs remain in the action: 18 adults and six minor children.[2]

The first pretrial order in this case was entered on January 12, 1989. Among other things, it provided that discovery would conclude within 100 days, *i.e.*, on April 22, 1989. On February 6, 1989, plaintiffs moved for an indefinite extension of the discovery period. *See* Findings of Fact at paras. 9-10.

At the first pretrial conference on March 28, 1989, plaintiffs' counsel recommended that the litigation be approached in a "phased" manner. Litton agreed with this suggestion, and the undersigned issued a scheduling Order on April 10, 1989, which implemented the various agreements reached at the March 28 hearing. The April 10, 1989, Order provided that issues of liability and medical causation would be addressed first, through discovery and the filing of dispositive motions, under a schedule of dates agreed to by both parties, with remaining issues, if any, to be addressed thereafter. Under the original schedule, summary judgment motions on these matters were to have been filed in July 1989. *See* Findings of Fact at paras. 13-14.

Shortly after issuance of the April 10, 1989, Order, plaintiffs requested an extension of the deadlines to which they had

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[2] The original complaint named 30 plaintiffs. One plaintiff was named twice in the complaint, under different names. Two plaintiffs, Lucille and Crystal Leatherwood, were voluntarily dismissed without prejudice because they could no longer be found by plaintiffs' counsel. *See* Findings of Fact at para. 27. The complaints of three other plaintiffs--Joe, Edna, and Terry Conley--were dismissed with prejudice, on an earlier motion for summary judgment, because no chemicals had been shown to have been present in their well water. *See* Findings of Fact at para. 28.

originally agreed, claiming difficulty in obtaining and organizing their own medical records and preparing expert medical opinions based thereon.[3] Thus began the first of a series of repeated requests by plaintiffs for additional time in which to obtain expert opinions adequate to survive summary judgment motions. In response to this request, the undersigned extended the filing date for summary judgment motions to September 30, 1989. *See* Findings of Fact at paras. 16-17, 19-21.

Immediately prior to that date, however, plaintiffs petitioned the undersigned for another extension, expressly admitting that they had failed in the proofs of medical causation and would be unable to survive summary judgment. As plaintiffs' counsel explained, there were two main problems: their medical experts had been hampered by lack of time within which to review medical records and a series of tests on plaintiffs constituting the basis of the proposed testimony of their primary expert, neurologist Dr. Robert G. Feldman, would have to be redone because the neurologist who had performed the tests had done so improperly. *See* Findings of Fact at paras. 24-26, 29, 37.

As an alternative request for relief, plaintiffs sought voluntary dismissal without prejudice of their entire complaint. In its October 12, 1989, Memorandum and Recommendation, the undersigned recommended to the district court that this alternative request be denied. The district court sustained this recommendation in an Memorandum of Opinion and Order dated December 5, 1989. *See* Findings of Fact at paras. 26, 29-34.

The undersigned granted plaintiffs' motion for another extension and gave them until November 30, 1989, to come up with adequate expert opinions, with summary judgment motions then to be filed by March 15, 1990. The effect of that ruling was

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[3] On September 27, 1989, plaintiffs' counsel Donna K. Holt admitted in open court that plaintiffs' counsel had done virtually nothing to prepare for this litigation prior to filing suit.

to give plaintiffs a five-month extension of the date for developing expert opinions. In granting the extension, the undersigned advised plaintiffs that it would be their last. *See* Findings of Fact at paras. 29-31.

Plaintiffs, nevertheless, sought another extension on November 30, 1989. In their papers in support of such an extension, plaintiffs revealed that they had found two new expert witnesses who supposedly would fill the holes in their case, but again claimed that the experts had not had sufficient time to review documents, make calculations, and coordinate with each other. It became clear that plaintiffs' attorneys had previously misled the undersigned concerning the status of their case. Indeed, when plaintiffs' counsel claimed before the undersigned in September 1989 that plaintiffs were *not* fishing for new experts, they were *in fact* looking for the two experts they announced on November 30. Despite the lack of candor of plaintiffs' counsel, the undersigned granted plaintiffs a two-month extension and the deadline for filing summary judgment motions was extended until May 15, 1990. *See* Findings of Fact paras. 35-36.

On November 30, 1989, plaintiffs also renewed their motion for voluntary dismissal without prejudice. Because the Court had already ruled on the issue, the undersigned referred plaintiffs' motion directly to the district court, which in a Memorandum of Opinion and Order dated April 30, 1990, again denied it. In that Memorandum of Opinion and Order, at 8-9, the district court noted, *inter alia*, as follows:

> The Court is also aware that Plaintiffs are having difficulty finding evidence linking Defendant's conduct to Plaintiffs' ills.
>
> * * * *
>
> Plaintiffs have asked for and received five extensions of discovery in order to uncover critical medical evi-

> dence including expert opinion. One would have expected such information to exist in accessible and identifiable form prior to filing of the complaint. Despite the fact that each request for an extension has been granted, the Plaintiffs still seek voluntary dismissal of their claims apparently because of counsel's inability to meet the discovery deadlines as extended.

See Findings of Fact at paras. 47-48.[4]

Litton filed its summary judgment motions and Motion to Exclude on May 15, 1990. On the same day, plaintiffs filed a motion for partial summary judgment on certain liability issues related to counts VI and VII of the complaint. Litton responded to plaintiffs' motion on May 30, 1990. Plaintiffs, however, sought an extension of the time within which to respond to Litton's motions, and the undersigned granted plaintiffs an extension, longer than the one they had sought, until July 30, 1990. Plaintiffs' oppositions to Litton's motions were ultimately filed during the week after July 30, 1990. On August 17, 1990, plaintiffs filed their Motion to Strike. *See* Findings of Fact at para. 51.

The undersigned subsequently requested the advice of counsel in structuring arguments on the pending motions. Since Litton's motions, unlike those of plaintiffs, would, if granted, be dispositive of the entire case, the undersigned decided to hold Plaintiffs' Motion for Partial Summary Judgment in abeyance pending resolution of Litton's motions.[5] In addition, upon the advice of plaintiffs' counsel, the undersigned determined to hear argument first on Litton's Motion to Exclude, which itself acts

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[4] In its April 30 Opinion, the district court also noted that "plaintiffs' counsel have never indicated 'specific plaintiffs' on whom experts are not 'prepared to state a final opinion on medical causation.' A review of the file indicates that this is quite probably every plaintiff currently in the suit." *Id.* at 11.

[5] Similarly held in abeyance were Litton's Motion to Deem Admitted, the Hancock Motion, and Plaintiffs' Motion to Rejoin.

as a dispositive motion in the circumstances of this case, and then to hear argument on the Motion to Strike. Argument on the Motion on Causation was to be heard later the same day, and argument on the other motions was to be held on subsequent dates. *See* Findings of Fact at paras. 52-53.

Accordingly, the undersigned heard argument on the Motion to Exclude on August 30, 1990. The parties also agreed on August 30, 1990, to submit the Motion to Strike and the Motion on Causation on the briefs. Because the undersigned's recommended disposition of the initial motions will substantially determine the remaining motions as well, the undersigned has subsequently decided to prepare its recommended findings and conclusions on all remaining pending motions on the basis of the briefs. *See* Findings of Fact at paras. 54-55.

III. THE ISSUES INVOLVED IN THIS CASE

The foundation of virtually all of plaintiffs' claims in this case is their allegation that they have suffered physical injury as a result of alleged exposures to the chemicals at issue. As has already been decided in this case, such claims require proof of at least five *prima facie* elements:

> (1) release by defendant of complained of chemicals into the environment;
>
> (2) chemical migration into the groundwater and further migration into [plaintiffs'] wells;
>
> (3) ingestion of these chemicals by [plaintiffs];
>
> (4) injury; and
>
> (5) that the ingested chemicals were the cause of the injuries.

Memorandum and Recommendation (October 12, 1989) at 4, *aff'd*, Memorandum of Opinion and Order (December 5, 1989).

The allegations of the complaint thus raise a number of critical questions. First, is there admissible evidence concerning the *amount* of TCE to which each plaintiff was allegedly exposed and the *onset and duration* of such alleged exposure? Second, does each plaintiff actually suffer from any physical disease or injury? Third, assuming there is admissible evidence concerning the amount of TCE to which the plaintiff has been exposed and that the plaintiff is actually suffering from a physical disease or injury, is there admissible evidence, to a reasonable degree of medical certainty, that the alleged exposure caused the disease or injury? As previously held in this case, plaintiffs must "show . . . that [they have] sufficient evidence which would permit finding in [their] favor with respect to each element essential to [their] case." *Id.* at 5; Memorandum of Opinion and Order (December 5, 1989) at 2. A failure on any one of them requires that the claims of personal injury be dismissed.[6]

Litton contends that plaintiffs cannot meet certain of the prerequisites for maintaining this action. The Motion to Exclude seeks to preclude testimony of two of plaintiffs' experts who are critical to the remainder of their case: Mr. Gerald Moore, a hydrogeologist, who purports to testify concerning *when* chemicals from the plant first arrived at plaintiffs' wells, and Dr. Hugh Spencer, a biochemist, who purports to testify concerning the *levels* of chemicals to which plaintiffs allegedly were exposed in years prior to 1987, the first year for which any

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[6] *See Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986) (summary judgment must be entered "against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case"); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986) ("there is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party"); *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986) ("opponent [of motion for summary judgment] must do more than simply show that there is some metaphysical doubt as to the material facts").

actual data exist.[7] The basis for Litton's motion is that the proposed testimony does not comply with Federal Rules of Evidence 702 and 703 regarding expert witnesses and should also be excluded pursuant to Federal Rule of Evidence 403. The Motion on Causation, in turn, seeks summary judgment on the grounds that (1) certain plaintiffs cannot make a *prima facie* case that they have suffered any injuries and (2) plaintiffs' medical causation experts either do not provide sufficient evidence of causation to allow plaintiffs' claims to go to a jury or do not provide opinions which are admissible under the standards established by Federal Rules of Evidence 702, 703, and 403.

In response to the Motion to Exclude, plaintiffs have submitted affidavits from Mr. Moore and Dr. Spencer. In response to the Motion on Causation, plaintiffs have submitted individual affidavits from Dr. Alan Broughton, a pathologist; Dr. Robert Feldman, a neurologist; and Dr. George Rodgers, Jr., an M.D. toxicologist. In addition, plaintiffs have submitted a Joint Affidavit from Drs. Broughton, Feldman, and Rodgers. In reaching its recommended findings and conclusions, the undersigned has reviewed these affidavits with particular care, as well as those submitted by Litton.

The dispositive motions have been fully briefed, and the undersigned has had the opportunity to review a great volume of documentation submitted both in favor of and in opposition to such motions. The motions are, therefore, ripe for decision.

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[7] Taken together, the proposed testimony of Mr. Moore and Dr. Spencer represents plaintiffs' effort to establish the *dose* of TCE to which they were exposed. Evidence concerning dose is essential to plaintiffs' proposed testimony on medical causation because a standard tenet of toxicology first articulated by the 16th century Swiss physician Paracelsus--undisputed by plaintiffs--is that *all* substances are poisons and the right dose differentiates between a remedy and a poison. It has become apparent, for example, that the Hancocks sought voluntary dismissal of their claims because their evidence concerning dose was insufficient to enable any plaintiffs' medical expert to render an affirmative opinion on causation.

IV. THE APPROPRIATE STANDARD OF REVIEW

In evaluating the pending motions and preparing the proposed findings, conclusions, and recommendations, the undersigned has borne in mind the following governing principles. A court should grant summary judgment where there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. of Civ. P. 56(c). The Supreme Court has explained that the moving party's burden may be discharged "by 'showing'—that is, pointing out to the [trial] court—that there is an absence of evidence to support the nonmoving party's case." *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986). The *Celotex* court held:

> [Summary judgment is appropriately entered] against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial. In such a situation, there can be "no genuine issue as to any material fact," since a complete failure of proof concerning an essential element of the nonmoving party's case necessarily renders all other facts immaterial. The moving party is "entitled to judgment as a matter of law" because the nonmoving party has failed to make a sufficient showing on an essential element of her case with respect to which [he or] she has the burden of proof.

477 U.S. at 322-23; *see also Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986) ("there is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party").

As an initial matter, the undersigned must determine what level of review is necessary and appropriate under the Federal Rules of Evidence when a court is faced with attacks on the admissibility of expert testimony. Plaintiffs suggest that any

such review must be minimal; that as long as an expert uses the appropriate words, *i.e.*, couches his conclusions in the phrase "to a reasonable degree of scientific (or medical) certainty," scrutiny of the expert's opinions must end; that any effort on the part of the court to ascertain whether an expert's opinions are speculative, or not based upon principles and methodologies that are generally accepted in the relevant medical or scientific community, or not reasonably based in facts, constitutes usurpation of the jury's function; and that as long as experts can be found to support both sides of a question, the court is left with a so-called "battle of the experts" that cannot be resolved save by trial to a jury.[8] Litton contends, conversely, that the court is required to do more; that the court must in fact determine whether the proposed expert testimony would be admissible within the parameters set forth in Federal Rules of Evidence 702, 703, and 403; that testimony that is speculative, not based upon principles and methodologies that are generally accepted in the relevant medical or scientific community, or not reasonably based in facts, must be excluded; and that a party's mere naming of an expert willing to use certain "magic words" does not end the court's scrutiny, but begins it. Since this issue is of importance to the undersigned's recommended rulings on the pending motions, it is addressed first.

After careful consideration, the undersigned concludes that the court is not required to accept into evidence all testimony proffered as expert. As an initial matter, Federal Rule of Evidence 104(a) requires the court to make preliminary determinations concerning the admissibility of evidence.[9] Nothing in

[8] Plaintiffs cite *Jackson v. Garrison*, 495 F. Supp. 9, 10-11 (W.D.N.C. 1979). *Jackson* relied heavily on the Fourth Circuit's opinion in *United States v. Baller*, 519 F.2d 463 (1975). Since the undersigned's recommendations herein also rely heavily on *Baller*, there is no inconsistency between such recommendations and the *Jackson* decision.

[9] Rule 104(a) provides that:

> Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility

Rule 104(a) suggests that expert testimony should be exempted from this requirement. Accordingly, the court must review admissibility under the structure provided by Rules 702, 703, and 403.

Federal Rule of Evidence 702 requires, first, that the court determine whether proposed testimony "will assist the trier of fact to understand the evidence or determine a fact in issue."[10] Rule of Evidence 703 establishes that the facts or data upon which the expert relies must be "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject . . . ."[11] Finally, Federal Rule of Evidence 403 authorizes exclusion of otherwise relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury . . . ."[12]

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of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.

[10] Rule 702 provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

[11] Rule 703 provides:

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.

[12] Rule 403 provides:

Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair preju-

To determine whether an expert will "assist the trier of fact," the court must do more than note that there has been a statement of opinion and reasons from a credentialed individual. In addition, the proponent of the evidence must establish that the theories, principles, and methodologies utilized by an expert are reasonably relied upon in the relevant scientific/medical community.[13] When the Court of Appeals for the Fourth Circuit addressed this question in *United States v. Baller*, 519 F.2d 463, 466 (4th Cir.), *cert. denied*, 423 U.S. 1019 (1975), it noted:

> There are good reasons why not every ostensibly scientific technique should be received as the basis for expert testimony. Because of its apparent objectivity, an opinion that claims a scientific basis is apt to command undue weight with the trier of fact . . . . In order to prevent deception or mistake . . . *there must be a demonstrable, objective procedure for reaching the opinion* . . . .

(Emphasis added.)

In addition, an expert opinion must rest on an adequate factual foundation.[14] In the absence of such a foundation, an

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> dice, confusion of the issues, or misleading the jury or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.

[13] As plaintiffs themselves have stated, (Plaintiffs' Memorandum in Opposition to Litton's Motion in Limine at 5), "what is necessary is that the expert arrived at his . . . opinion by relying upon *methods* that other experts in his field would reasonably rely upon in forming their own . . .," *quoting Osborn v. Anchor Laboratories, Inc.*, 825 F.2d 908 (5th Cir. 1987).

[14] *See Rohrbough v. Wyeth Laboratories, Inc.*, 719 F. Supp. 470, 474 (N.D.W. Va. 1989) ("an expert opinion, submitted in opposition to a summary judgment motion, may be disregarded if it is not supported by facts"); *United States v. Certain Land*, 214 F. Supp. 148, 151 (M.D. Ala. 1963) (if the assumptions upon which an expert opinion is based are not true, the opinion is worthless).

expert's purported opinion cannot "assist the trier of fact" and thus cannot be allowed into evidence.

Plaintiffs do not take issue with these legal standards. They argue, however, that so long as an expert claims to be using a reliable methodology, the court cannot look behind the claim. This argument is incorrect. Indeed, if it were correct, no expert testimony could ever be excluded, no matter how flimsy the factual basis or how unreliable the methodology, because the expert's incantation of the "magic words" would preclude judicial review.

The undersigned concludes that the Court is required to look behind the surface of an expert's claims of reliability in making its preliminary determination concerning admissibility under Federal Rules of Evidence 702 and 703. When inquiry reveals that proffered testimony would be based upon mistaken assumptions or speculative theories, for example, the testimony must be excluded.[15] The court must be vigilant against the possibility that a jury could be swayed by an expert simply because of his credentials and the purported scientific nature of his opinions. *See United States v. Baller*, 519 F.2d at 466-67.[16]

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[15] *See, e.g., Sterling v. Velsicol Chemical Corp.*, 855 F.2d at 1207-09 (excluding testimony of experts based upon pseudo-scientific principles of "clinical ecology"); *Hull v. Merck & Co.*, 758 F.2d 1474, 1477 (11th Cir. 1985) (trial court correctly excluded medical causation testimony because expert's "assumptions . . . rendered his seemingly firm opinion quite speculative"); *United States v. MacDonald*, 485 F. Supp. 1087, 1096 (E.D.N.C. 1979), *aff'd*, 688 F.2d 224 (4th Cir. 1982), *cert. denied*, 459 U.S. 1103 (1983) (excluding evidence of psychiatrist concerning defendant's ability to form mental state).

[16] *See also Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 252 (1986) ("[t]he mere existence of a scintilla of evidence in support of the plaintiff's position will be insufficient; there must be evidence on which the jury could *reasonably* find for the plaintiff") (emphasis added); *Wratchford v. S. J. Groves & Sons Co.*, 405 F.2d 1061, 1066 (4th Cir. 1969); *Ford Motor Co. v. McDavid*, 259 F.2d 261, 266 (4th Cir.), *cert. denied*, 358 U.S. 908 (1958); *Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 424 (5th Cir. 1987) ("without

Such review by the court does not mean that the court is resolving a so-called "battle of the experts" weighing the evidence, or otherwise usurping the function of the jury. It means that the court is doing its job to determine what evidence may be *heard* by the jury. It is the function of the court to determine what evidence is or is not heard by the jury. It is further the responsibility of the court, pursuant to Rule 56 of the Federal Rules of Civil Procedure, to determine whether a nonmovant plaintiff can adduce *admissible* evidence that would allow a reasonable jury to rule in his favor on any contested element of the nonmovant's case. With these general principles in mind, the undersigned now turns to the specific motions before it.

V. THE MOTION TO EXCLUDE THE TESTIMONY OF MR. MOORE AND DR. SPENCER

As noted above, plaintiffs rely on two witnesses for opinion evidence concerning the length of time to which plaintiffs allegedly were exposed to TCE and the degree of alleged exposure. The undersigned concludes that neither can show that the method used in forming his opinions is generally accepted in the relevant scientific community or otherwise can show an adequate basis for his opinion. In addition, the undersigned concludes that one of the witnesses, Dr. Spencer, is not an "expert" within the meaning of Rule 702 for purposes of his proposed opinions in this case.

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more than credentials and a subjective opinion, an expert's testimony that 'it is so' is not admissible"); *Garwood v. International Paper Co.*, 666 F.2d 217, 223 (5th Cir. 1982) (court excluded the testimony of "human factors engineer" because it was not helpful or of assistance); *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974) ("scientific proof in some cases may assume a posture of mystic infallibility in the eyes of a jury of laymen"); *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. 1223, 1239 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied*, 427 U.S. 1234 (1988); Conclusions of Law at paras. B2 - B19.

A. Opinions of Mr. Moore

The first witness, Gerald Moore, is a hydrogeologist upon whom plaintiffs rely for testimony that chemicals from the plant did in fact migrate to plaintiffs' wells. As noted, although Litton denies such migration, the pending motions do not require resolution of that dispute. In addition, however, plaintiffs rely upon Mr. Moore for testimony that chemicals from the plant arrived at plaintiffs' wells not later than 1970. This is a conclusion that is critical to plaintiffs' medical causation experts, as plaintiffs themselves have admitted, because it is essential for them to know that exposure preceded plaintiffs' alleged symptoms in order for the exposure to be considered as a possible cause of those symptoms and, ultimately, to know the alleged dose of TCE to which plaintiffs were exposed.

Mr. Moore's opinions were the subject of detailed deposition examination by Litton. Review of that testimony, submitted by the parties, shows that Mr. Moore acknowledges that for chemicals to move from the plant side of Slow Creek to the plaintiffs' side, the normal flow of groundwater (which is *into* Slow Creek from both sides) would have to be reversed. Mr. Moore is unable to testify, however, when or how often such supposed reversals took place.[17] His official report to plaintiffs' counsel concerning this case offers no such information. The affidavit that Mr. Moore submitted on behalf of plaintiffs' opposition to Litton's Motion to Exclude provides little additional assistance. Although Mr. Moore states in a conclusory fashion his opinion that chemicals arrived at plaintiffs' wells in 1970, he does not address any of the points raised by Litton.

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[17] Mr. Moore has opined that, during dry seasons, when plaintiffs drew down heavily on their water supply, their wells would have been able to pull chemicals from the plant side of Slow Creek to the plaintiffs' side. Mr. Moore testified, however, that he does not have any historical records of plaintiffs' water usage, nor has he examined historical meteorological data to determine when, if ever, the conditions were such that the normal flow of water at Slow Creek would have been reversed; Findings of Fact at paras. 58-63.

Instead, the bulk of the affidavit is devoted to an apparent defense of his opinion that the plant was the source of the chemicals. As noted above, this is an issue that Litton has not contested for the purposes of its motion.

Among other things, a review of the materials submitted shows that Mr. Moore has never run any scientific tests on plaintiffs' wells; he has never observed such wells in the condition that he says would have been necessary to pull chemicals under Slow Creek; he has never taken any groundwater measurements between Slow Creek and plaintiffs' wells to determine in which direction the groundwater is flowing; and he has never reviewed any rainfall data to confirm or refute his hypotheses about flow during periods of dry weather. In short, he has offered opinions that are completely lacking of an adequate factual basis as to when in the past chemicals allegedly arrived from the plant at plaintiffs' wells. *See* Findings of Fact at paras. 58-63.

During oral argument plaintiffs argued that since TCE was found in plaintiffs' wells in 1987, and since TCE has not generally been used at the plant as a degreaser since the mid-1970's (a point that Litton does not contest), it is a matter of "common sense" that TCE must have been in plaintiffs' wells since the 1970's. Unfortunately for plaintiffs, this is not a matter of "common sense" at all. Plaintiffs do not dispute that groundwater normally does not flow under Slow Creek from the plant to plaintiffs' wells. As Mr. Moore admitted at his deposition, special conditions were necessary before such flow could theoretically take place. *See* Finding of Fact at para. 58. If the plant is the source of the chemicals at plaintiffs' wells, therefore, it is entirely possible that they arrived there shortly before they were found. Because plaintiffs need to establish otherwise for the purposes of their case on medical causation, it is their burden to adduce admissible expert testimony as to when the chemicals arrived.

Accordingly, the undersigned has determined that the proposed testimony of Mr. Moore concerning when chemicals from the plant allegedly arrived at plaintiffs' wells is speculative and not based upon the kind of facts or data that would be relied upon by experts in the field. Nor could Mr. Moore show a "demonstrably objective" methodology, within the meaning of the Fourth Circuit's *Baller* decision, for determining the date when chemicals from the plant first allegedly arrived at plaintiffs' wells. Consequently, the proposed testimony is not admissible under Rules 702 and 703. In addition, the probative value of Mr. Moore's proposed testimony is greatly outweighed by the undue prejudice that would accrue to Litton were his testimony to be admitted, and it should be excluded under Rule 403 as well.

B. Opinions of Dr. Hugh Spencer

In addition, plaintiffs rely upon the opinions of Dr. Hugh Spencer. Dr. Spencer is not a licensed professional engineer, but styles himself as an expert in "chemodynamics," which the undersigned understands as referring to a field of science that addresses the fate of chemicals in the environment. Dr. Spencer's affidavit submitted by plaintiffs was devoted, in part to defending the field of "chemodynamics" as a legitimate scientific discipline. The undersigned's conclusions concerning the admissibility of Dr. Spencer's testimony assume (without deciding) that it is a legitimate field in which expert opinions can be adduced. Nonetheless, the undersigned concludes that Dr. Spencer's testimony should be excluded.

Dr. Spencer opines that concentrations of TCE between 1970 and 1974 were between 100 and 1,000 times higher than actually measured concentrations in 1987 and that, after 1974, such concentrations decreased steadily until 1987. These opinions are based upon Dr. Spencer's hypothesis of a "TCE environmental half-life," *i.e.*, a period of time in which any amount of TCE in the environment decreases to one-half of its starting

concentration. Using assumed half-lives of both 1.5 and 2.0 years, Dr. Spencer "back-calculated" from measured or theoretical concentrations in the Carroll Well (the well from which most of plaintiffs drank at some point in time) and repeatedly doubled concentrations until the hypothesized concentrations were, as noted, 100 to 1,000 higher than any measured concentrations. It is upon these estimates of past exposures that plaintiffs' medical causation experts rest their opinions.

After having reviewed the detailed submissions of the parties, the undersigned concludes that Dr. Spencer's testimony must be excluded for a number of reasons, each of which is sufficient to compel that result. First, Dr. Spencer has agreed (as has Mr. Moore) that his method of determining historical concentrations has no recognition, or even reference, in any scientific literature, in any learned treatise, or in any actual application. Although Dr. Spencer and plaintiffs assert that the concept of "half-life" is regularly used in science, they admit that it is used prospectively only, as an approximation for what may happen in the future (an approximation that is, of course, subject to confirmation and alteration as data are collected). Plaintiffs and Dr. Spencer have failed to show any scientific treatise or paper or research of any kind supporting a theory that such a concept can be used retroactively for the very different purposes involved in a tort case such as this. Indeed, the author of the study upon which Dr. Spencer supposedly placed substantial reliance submitted an affidavit to the court excoriating the use that Dr. Spencer had made of his paper and the calculations that Dr. Spencer attempted.[18] *See* Findings of Fact at paras. 38, 71-76, 90-92.

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[18] The Affidavit of Dr. Paul Roberts referenced above is one of the items addressed by plaintiffs' Motion to Strike. The undersigned concludes that plaintiffs' objections to this affidavit and other materials addressed by the Motion to Strike are without merit and denies the motion. *See* Findings of Fact at paras. 90-92 and Conclusions of Law at paras. A1-A5.

Second, although Dr. Spencer admitted that the scientific community considers that site-specific data are best and should be used over literature-derived values, he concededly ignored site-specific data in forming his opinions. Indeed, Litton has demonstrated that actual data from the Carroll Well directly contradicts Dr. Spencer's theories about the site.[19] Thus, there has been no validation of Dr. Spencer's hypothesis at the very location to which it supposedly applies, and his own ground rules require rejection of his conclusions.

Third, Dr. Spencer's formula for deriving prior concentrations of TCE is so imprecise and inaccurate that Dr. Spencer himself conceded it would be fair to characterize his technique as "speculative." Indeed, Dr. Spencer conceded that his calculations incorporated a 1,400 percent margin of error that could not be reduced.

Fourth, Dr. Spencer cannot be considered an "expert" within the meaning of Rule 702 for the purposes of rendering his proposed opinions. He has never before in his professional career attempted to assess the fate of organic chemicals in an underground setting, has had no formal training in this realm of science, has done no research in this area, and has published nothing in this area. Furthermore, he admitted that he has never before studied the fate of TCE. He attempted to derive so-called "half-lives" from the scientific literature, but admitted that he was not familiar with all of the literature and stated that he hoped to be able to read everything in the next "five to ten years." As liberal as the undersigned wishes to be in allowing a purported

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[19] As noted, Dr. Spencer assumed that TCE in the environment has a "half-life" of between 1.5 and 2 years. When he was asked in deposition to determine the half-life of TCE at the Carroll well from 1987 to 1989, based on actual data, the calculated half-life was more than 5,000 years. Contrary to Dr. Spencer's hypothesis, the concentration of TCE at the Carroll well did not appreciably change during the time that actual data were available. Dr. Spencer has made no attempt to explain this inconsistency. *See* Findings of Fact at paras. 86-89.

expert to qualify as an expert with the meaning of Rule 702, Dr. Spencer falls far short of the mark.

Finally, Dr. Spencer's opinions must be excluded because they are completely dependent on Mr. Moore's opinions concerning when chemicals from the plant first arrived at plaintiffs' wells. That is, before Dr. Spencer's testimony can be meaningful, even with all of its other failings, he must *assume* that the chemicals were present in plaintiffs' wells in 1970. Since the undersigned has concluded that Mr. Moore's testimony concerning that issue should be excluded, Dr. Spencer's testimony would have no foundation.

In summary, the undersigned concludes that Dr. Spencer's proposed opinions are speculative, find no support in the scientific literature, are not based upon a reliable, demonstrated methodology, are not reasonably based upon facts, and would not be of assistance to the trier of fact. His opinions should, therefore, be excluded under Rules 702 and 703. In addition, the undersigned finds that the probative value of Dr. Spencer's opinions, if any, would be greatly outweighed by the likelihood of substantial undue prejudice to Litton and should, therefore, also be excluded under Rule 403. In the absence of the testimony of Mr. Moore and Dr. Spencer, plaintiffs cannot meet elements (2) and (3) of the five elements set forth above, *i.e.*, the exposure aspects of their personal injury claims.

VI. ANALYSIS OF MOTION ON CAUSATION

The exclusion of Mr. Moore's and Dr. Spencer's testimony requires the court to exclude as well the testimony of plaintiffs' experts on medical causation. As set forth in paragraph 26 of the Joint Affidavit submitted by plaintiffs, their medical causation experts are not prepared to render causation opinions in this case in the absence of Dr. Spencer's back-calculations. Instead, before any opinions could even be considered, these experts assert that they would need to conduct "another review of the

information" and perhaps come forward with additional opinions.[20]

As set forth above, the undersigned has granted plaintiffs numerous extensions of time. Litton has already been required to go through two cycles of reviewing plaintiffs' expert nominations, preparing to respond to such nominations, and conducting lengthy and expensive depositions. The suggestion by plaintiffs that their experts be given yet *another* chance to reformulate opinions would require Litton to go through a third cycle. All litigation must come to an end. Plaintiffs were clearly and repeatedly instructed that final expert opinions were to be submitted and that no further extensions would be allowed. Since plaintiffs' medical causation experts cannot present evidence of causation to a reasonable degree of medical certainty at this time without Dr. Spencer's back-calculations, and such back-calculations should be excluded, the testimony of plaintiffs' medical causation experts fails as well.

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[20] Paragraph 26 of the Joint Affidavit reads in full as follows:

> Even if Dr. Rodgers [sic] calculations [based upon those of Dr. Spencer] were adjusted by the factor of 10 suggested by the defendants [sic] alternative calculation for respiratory exposure, or were otherwise adjusted downward, this would not affect the opinions expressed on causation in this case for the plaintiffs who have had long term exposures. *If Dr. Spencer's back calculations were dismissed entirely, this would not require a change in our opinions as to all plaintiffs for whom we have expressed a positive opinion on medical causation. It would, however, require another review of the information on each plaintiff to ascertain the length of time that the particular plaintiff was exposed to the well water.* As we have all testified in our depositions, studies have shown adverse health effects in persons chronically exposed to drinking water with substantially less than 100 ppb of TCE. The actual test results in this case have shown levels from 1 to 84 ppb.

Emphasis added.

In any event, Litton's Motion on Causation requires dismissal of plaintiffs' personal injury claims even if Mr. Moore's and Dr. Spencer's evidence were admitted.[21] First, many of the plaintiffs have not demonstrated that there is anything physically wrong with them, *i.e.*, they cannot demonstrate the "injury" element of their claims. In this regard, the six minor plaintiffs have been examined by Dr. Harold Schutte, a Board-certified pediatrician and independent medical examiner. Dr. Schutte has concluded, with respect to each, that he or she is in good or excellent health and is normal in every way. *See* Findings of Fact at paras. 117-118. Plaintiffs have offered no expert testimony to refute these findings. *See* Findings of Fact at para. 119. Accordingly, the personal injury claims of the minor plaintiffs must be dismissed.

Similarly, two adult plaintiffs, Sandra Hancock (who has moved the court for an order of dismissal) and Melanie Messer, have been unable to present any expert testimony on medical causation that even purports to find, to a reasonable degree of medical certainty, that any of their alleged health complaints were caused by exposure to the chemicals at issue. *See* Findings of Fact at para. 120. Accordingly, their personal injury claims must also be dismissed.

Two plaintiffs, James Kenny Green and Marvin Garrett, admitted in their depositions that they were not alleging that they had suffered any personal injury as a result of their alleged exposures to the chemicals at issue. *See* Findings of Fact at paras. 121-122. Accordingly, their personal injury claims must also be dismissed.

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[21] Although resolution of the Motion on Causation under the assumption that the proposed testimony of Mr. Moore and Dr. Spencer would be admitted is not necessary to dispose of this case, given the undersigned's conclusions on the Motion to Exclude, the undersigned believes that resolution of these issues now would be the most efficient means of addressing all matters before the court. Otherwise, there is a risk that motions would be brought before the district court on appeal of the undersigned's rulings *seriatim*, consuming even more of the court's limited time.

With respect to the remaining plaintiffs, the undersigned has carefully reviewed the proposed opinions, and bases for those opinions, offered by Drs. Broughton, Feldman, and Rodgers. Based upon its review, the undersigned concludes that the proposed opinions are either (1) insufficient to establish a genuine issue of fact, (2) inadmissible, or (3) both. Accordingly, they are inadequate to establish a *prima facie* case sufficient to withstand summary judgment. Before discussing these witnesses and their proposed testimony with more particularity, the undersigned reviews in more detail some of the fundamental principles that govern its analysis.

A. Requirements for Establishing Medical Causation

Under North Carolina law, a plaintiff bears the burden of proving that a defendant actually caused his or her injuries. *Starnes v. Taylor*, 272 N.C. 386, 391, 158 S.E.2d 339, 343 (1968); *Azzolino v. Dingfelder*, 71 N.C. App. 289, 298, 322 S.E.2d 567, 575 (1984), *aff'd in part and rev'd in part on other grounds*, 313 N.C. 327, 327 S.E.2d 887 (1985), *cert. denied*, 479 U.S. 835 (1986); *Lindsey v. Clinic for Women, P.A.*, 40 N.C. App. 456, 462, 253 S.E.2d 304, 308 (1979).

Plaintiffs must show by a preponderance of the evidence that, but for their alleged exposures, they would not have developed their specific illnesses or complaints. *See In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1261-63; *In re Swine Flu Immunization Products Liab. Litigation*, 508 F. Supp. 897, 906 (D. Colo. 1981), *aff'd sub nom. Lima v. United States*, 708 F.2d 502 (10th Cir. 1983).

It is not enough for plaintiffs to show that exposure to the chemicals at issue has a potential for causing harm. *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823, 828 (D.C. Cir. 1988); *Sterling v. Velsicol Chemical Corp.*, 855 F.2d 1188, 1199-201 (6th Cir. 1988); *In re "Agent Orange" Product Liability Litigation*, 818 F.2d 145, 164-65 (2d Cir. 1987); *In re "Agent Orange"*

Product Liability Litigation, 611 F. Supp. at 1231-34. For that reason, mere exposure to a potentially toxic substance does not constitute a "physical injury" upon which a claim can be based.[22] Rather, each individual plaintiff has the burden of establishing that he has, in fact, suffered a physical injury or illness *as a result of exposure to the chemicals at issue. See, e.g., Novak v. United States*, 865 F.2d 718, 721 (6th Cir. 1989); *see also Fitzgerald v. Manning*, 679 F.2d 341, 346, 348 (4th Cir. 1982) (court must direct verdict for defendant when probabilities are evenly balanced).

Not only must plaintiffs produce expert testimony on the issue of medical causation, such testimony must establish, to a reasonable degree of medical certainty, that the alleged injuries stem from the exposures in question. *Owens v. Bourns, Inc.*, 766 F.2d 145, 149-50 (4th Cir.), *cert. denied*, 474 U.S. 1038 (1985); *Fitzgerald v. Manning*, 679 F.2d at 350; *see also Ralston Purina Co. v. Edmunds*, 241 F.2d 164, 168 (4th Cir.), *cert. denied*, 353 U.S. 974 (1957) ("the jury may not be permitted to guess between competing possibilities").[23] In this regard, part of plaintiffs' burden is to exclude, to a reasonable degree of medical certainty, other possible causes for their symptoms. *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1250 ("[c]entral to the inadequacy of plaintiffs' case is their inability to exclude other possible causes of plaintiffs' illnesses"); *see Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 424

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[22] *See, e.g., De Stories v. Phoenix*, 154 Ariz. 604, 607, 744 P.2d 705, 711 (App. 1987); *Morrissy v. Eli Lilly & Co.*, 76 Ill. App. 3d 753, 761, 394 N.E.2d 1369, 1376 (1979); *Cathcart v. Keene Indus. Insulation*, 324 Pa. Super. 123, 151-52, 471 A.2d 493, 508 (1984) (en banc).

[23] In a federal diversity action, the sufficiency of evidence to create a jury question is a matter governed by federal law. *Fitzgerald v. Manning*, 679 F.2d at 346; *Bryan v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 565 F.2d 276, 281 (4th Cir. 1977), *cert. denied*, 435 U.S. 943 (1978); *Wratchford v. S. J. Groves & Sons Co.*, 405 F.2d 1061, 1066 (4th Cir. 1969); *Owens v. International Paper Co.*, 528 F.2d 606, 609 (5th Cir. 1976).

(5th Cir. 1987), *affirming* 646 F. Supp. 1420, 1424 (E.D. Tex. 1986); *Rohrbough v. Wyeth Laboratories, Inc.*, 719 F. Supp. 470, 475-76 (N.D.W. Va. 1989).

Finally, a causation opinion should not be admitted unless it is based upon valid human, epidemiological data. *Brock v. Merrill Dow Pharmaceuticals, Inc.*, 874 F.2d 307, *as modified*, 884 F.2d 166 (5th Cir. 1989), *cert. denied*, ___ U.S. ___, 4 Tox. L. Rep. 1178 (March 19, 1990); *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823, 830-32 (D.C. Cir. 1988); *Viterbo v. Dow Chemical Co.*, 826 F.2d at 424; *In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1241.[24] With these principles in mind, the undersigned turns to the specific evidence offered by plaintiffs.

B. The Testimony Offered by Dr. Broughton

Dr. Alan Broughton would testify, if allowed, that plaintiffs exhibit various alleged abnormalities in their immune systems, *i.e.*, alleged increased levels of certain T-lymphocytes and autoantibodies. Dr. Broughton, however, has admitted that none of the plaintiffs has any immunological disease or injury. Broughton Aff. at para. 17. He has also admitted that he cannot testify that any of the plaintiffs will likely develop such a disease in the future. *Id.* at 13. Indeed, in deposition testimony, he admitted that the medical community would not regard his laboratory findings as evidence of the existence of any illness. Broughton Dep. at 2-416-17, 3-232, 3-234.

In short, it is clear that Dr. Broughton cannot provide testimony that any of these plaintiffs has an illness or injury, let alone an illness or injury caused by their alleged exposure to chemicals. At most, his testimony suggests the existence of

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[24] Plaintiffs take strong exception to this principle. The undersigned concludes that even if valid, human epidemiological data were not required, Litton is entitled to summary judgment on medical causation for the other reasons set forth in this opinion.

certain subclinical effects of the alleged exposure. Plaintiffs have failed to satisfy the undersigned, however, that alleged subclinical effects can constitute an "injury" under North Carolina law.[25] Accordingly, his testimony would be inadmissible under Federal Rules of Evidence 401-02, because it is not relevant, and under Rule 403, because any probative value would be greatly outweighed by the likelihood of jury confusion, *i.e.*, between "injury" as Dr. Broughton proposes to use the term and what constitutes a cognizable injury under the law.

In addition, Dr. Broughton's testimony would be inadmissible for other reasons. He admitted at his deposition that the alleged subclinical effects can arise from a host of other causes in addition to exposure to the chemicals at issue. He was unable to rule out those other causes, such as prescription medications, viruses, arthritis, exposure to chemicals not related to Litton, and so on. Accordingly, he has effectively admitted that there is no reasonable basis for his belief that the alleged effects he found in plaintiffs stemmed from their alleged exposure. *See* Findings of Fact at paras. 127-142. Thus, his testimony is too speculative and would not be of "assistance to the trier of fact" as required by Rule 702.

Furthermore, Dr. Broughton's hypothesis that plaintiffs' levels of lymphocytes and autoantibodies is high is based upon a comparison with a control group that Dr. Broughton admitted in his affidavit were *not* age-matched (Broughton Aff. at paras. 5, 8(2)), *not* matched geographically (*id.* at para. 8(1)(b)), *not* matched on the basis of origin of patients (*id.*), and *not* matched on the basis of symptomatology (*id.* at para. 8(3)). Any testimony to the effect that plaintiffs have "high" levels of these parameters would, therefore, constitute speculation without an

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[25] Subclinical findings do not qualify as "injury in fact." *See, e.g., Sterling v. Velsicol Chemical Corp.*, 855 F.2d at 1207-09; *Caputo v. Boston Edison Co.*, C.A. No. 88-2126-z (D. Mass. July 9, 1990) (LEXIS, Genfed Library Dist. file); *Burns v. Jaquays Mining Corp.*, 156 Ariz. 375, 752 P.2d 28 (App. 1987).

adequate factual basis, as proscribed by Rules 702 and 703. In addition, the probative value, if any, of such testimony would be greatly outweighed by the likelihood of undue prejudice under Rule 403. Accordingly, Dr. Broughton's proposed testimony is inadequate to create a material issue of fact sufficient to defeat summary judgment.

C. The Testimony Offered by Dr. Feldman

Dr. Feldman, plaintiffs' proferred expert in neurology, purports to offer opinions "to a reasonable degree of medical certainty" that some of the plaintiffs suffer from a variety of neurological complaints caused by their alleged exposure to TCE. Examination of the bases for these opinions demonstrates, however, that the requirements for admissibility pursuant to Federal Rules of Evidence 702 and 703 cannot be met as to his testimony.

Most importantly, Dr. Feldman's opinions directly violate the prerequisites that he himself set for expression of medical causation opinions. On January 30, 1990, plaintiffs' deadline for providing final expert opinions, Dr. Feldman issued separate "opinion" letters for each of 12 plaintiffs: James Carroll, Sr., Martha Carroll, James Carroll, Jr., Belinda Gaddis, Randy Gaddis, Rosetta Edwina Rogers, Keith Scott Gentle, Barbara Messer, Ancy Simonds, James Messer, Deborah Chambers, and Fred Allen Chambers. The "opinion" letters failed to include any final opinion, to a reasonable degree of medical certainty, that plaintiffs' alleged neurological complaints were, in fact, caused by exposure to TCE. Instead, the letters noted that any such opinions would be conditional on the following:

> subsequent receipt of confirmatory positive blink reflex data from a reliable electrophysiologist[;]
>
> subsequent receipt of evidence of neuropsychological impairment obtained by a qualified neuropsychologist [;]

reliability of self-reporting on neurological questionnaires[; and]

ability to rule out other possible causes for plaintiffs' complaints.

Litton has demonstrated, and plaintiffs have not refuted, that the conditions have not been met. *See* Findings of Fact at paras. 152-154, 161.

For example, Dr. Feldman views abnormal performance on the blink reflex test as the cardinal indicator of TCE's alleged adverse effects on human beings, and it was upon his advice that plaintiffs were given the test initially. When Dr. Bergia administered the test and generally found that plaintiffs were normal, Dr. Feldman criticized her techniques and called for a second round of tests, this time by one of his colleagues, Dr. Niles. Plaintiffs' counsel informed the undersigned that Dr. Bergia had "botched" the blink reflex tests and that Dr. Feldman could not rely upon them. *See* Findings of Fact at paras. 37-39, 159-160. Partially on the basis of these representations, the undersigned allowed plaintiffs what amounted to a five-month continuance in this case.

The second round of blink reflex tests indisputably confirmed that plaintiffs were completely normal. Rather than reformulate his opinions, however, Dr. Feldman chose to rely on these normal results as evidence of disease. He states in his affidavit that "[v]alues that lie within the range of normal do not assure that the individual is disease-free" (Feldman Aff. at para. 20) and that "some individuals with the [unspecified] disease will have values that lie within normal limits" (*id.*). Dr. Feldman thus proposes to ignore completely the prior condition he set for his own opinions and his own objective test results.

Similarly, Dr. Feldman assumed as a fundamental basis of his opinions that abnormal neuropsychological data would be obtained for a number of plaintiffs. Again, when subsequent

testing either contradicted his conclusions or was not conducted at all, Dr. Feldman simply chose to ignore the very conditions he had placed on his own opinions. Likewise, he has ignored other conditions that he put on his opinions: the reliability of plaintiffs' answers to certain "neurological questionnaires" and his ability to rule out other possible causes of plaintiffs' ailments. Litton has demonstrated, without any serious attempt at refutation by plaintiffs, that the answers to the questionnaires are not reliable (*see* Findings of Fact at paras. 175-181) and that Dr. Feldman has not ruled out a myriad of other potential causes of plaintiffs' alleged symptoms (*see* Findings of Fact at paras. 182-183). Differential diagnosis is, however, essential to provision of expert medical testimony on causation, as plaintiffs' experts have themselves admitted.

Plaintiffs have failed to respond coherently to these deficiencies in Dr. Feldman's proposed testimony. Indeed, many of the issues raised by Litton have been completely ignored by plaintiffs.[26] Since Dr. Feldman's proposed testimony contradicts the conditions he set out previously for expressing opinions on causation to a reasonable degree of medical certainty, it is clear that such testimony is speculative, without foundation in the facts of the case, and of no "assistance to the trier of fact" within the meaning of Rules 702 and 703. In addition, the probative value of such testimony, if admitted, would be greatly outweighed by the likelihood of confusion of the jury and thus should be excluded pursuant to Rule 403.

D. The Testimony Offered by Dr. Rodgers

Most of the symptoms addressed by Dr. Rodgers, as were those addressed by Dr. Feldman, are vague, subjective neurological complaints such as headaches, forgetfulness, and anxiety. Dr. Rodgers purports to express opinions that a number of

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[26] The undersigned could, therefore, have treated these issues as conceded by plaintiffs but, in an abundance of caution, has determined to examine them.

these complaints were "probably" caused by plaintiffs' alleged exposure to TCE. His opinions, however, fail in a variety of ways to meet the requirements of the Federal Rules of Evidence.

First, Dr. Rodgers conceded that, if he were to submit a report containing his conclusions on causation to a respected medical journal for publication, the journal would reject the report because Dr. Rodgers' opinions were not based upon "objective scientific factual proof." Rodgers Dep. at 2-11. Second, Dr. Rodgers (as did Dr. Feldman) based his opinions upon "results" in studies that were either uncontrolled or not shown to be statistically significant by the very scientists conducting those studies. Indeed, Dr. Rodgers admitted that there were no studies that were "appropriate" to the circumstances in this case. Nevertheless, he insisted on relying upon such studies because of a desire to be "fair" to plaintiffs.[27] Third, although Dr. Rodgers opined that some of plaintiffs' subjective symptoms were caused by exposure to the chemicals, he admittedly failed, as did Dr. Feldman, to rule out many of the other possible causes of those symptoms. *See* Findings of Fact at paras. 188, 191-192, 196-202.

In opposition to Litton's Motion on Causation, Dr. Rodgers submitted an affidavit in which he purported to outline the process he utilized for designating various alleged symptoms as "probably" related to TCE. At best, the affidavit can be said to be conclusory. It made no effort to address the most important issues raised by Litton. Significantly, Dr. Rodgers failed in his affidavit to address his admission that his opinions in this case would not be worthy of publication in a reputable medical journal because they lack "objective scientific factual proof."

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[27] To the extent that Dr. Rodgers seeks to rely upon inappropriate and inadequate studies in a desire to be "fair" to plaintiffs, he attempts improperly to lower the level of scientific evidence required in a court of law and to place the burden of proof not on plaintiffs, where it properly rests, but on Litton, where it does not.

Rodgers Dep. at 2-10-11. His admission provides an excellent reason for this court to reject the evidence as well.[28]

In addition, Dr. Rodgers failed to address his admission that the studies upon which he relied were subject to numerous weaknesses and could not be taken as any support for his opinions. *See* Findings of Fact at para. 192. Dr. Rodgers merely ignored these arguments and continued to rely on the same articles. *See* Rodgers Aff. at para. 4 (reviewing unspecified medical literature to support opinions).

Finally, Litton demonstrated in its Motion for Causation that Dr. Rodgers, in formulating his opinions in this case, ignored the basic principles of epidemiology. Thus, he could not say whether the incidence of the alleged ailments in the plaintiffs exceeded what would be expected from a group of unexposed individuals; could not say whether the alleged causal relationships made any biological sense; and could not cite to any valid epidemiological study showing that TCE, at the levels alleged in this case, causes any of the alleged complaints. *Id.* In his affidavit, Dr. Rodgers again disregarded these points.[29]

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[28] *See Ealy v. Richardson-Merrell, Inc.*, 897 F.2d 1159 (D.C. App. 1990) (expert "reanalysis" of previous studies excluded because it had not been published and subjected to peer review); *Turpin v. Merrell Dow Pharmaceuticals, Inc.*, 736 F. Supp. 737, 743 (E.D. Ky. 1990) (same); *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 727 F. Supp. 570, 575 (S.D. Cal. 1989) (same). Dr. Rodgers himself has noted that opinions that *are* published in scientific and medical journals are "much more persuasive" than opinions (such as his) set forth in affidavits hidden from open, critical peer review. *See* Rodgers Aff. at para. 9.

[29] Dr. Rodgers attempted to use a so-called "correlation" to support his opinions. He has testified, however, that he has had no training or expertise in epidemiology or biostatistics, and he did not cite any scientific or medical treatise showing that his purported methodology is accepted by the medical community as a basis for rendering opinions on causation. Litton's experts, by contrast, have pointed out that "[t]he fields of medicine and epidemiology would give no credence or weight to [Dr. Rodgers'] purported correlation as a basis for formulating opinions on medical causation." *See* Supplemental

The undersigned concludes that plaintiffs have not demonstrated a legally sufficient foundation for Dr. Rodgers' testimony under Rules 702 and 703 of the Federal Rules of Evidence.[30]

E. The Opinions Set Forth in the Joint Affidavit

The Joint Affidavit submitted by plaintiffs similarly does not provide adequate support for the admissibility of the testimony of Drs. Broughton, Feldman, and Rodgers. First, although the Joint Affidavit cites a number of studies that purportedly support the views of plaintiffs' experts, review of those studies demonstrates that they do not. Paragraph 13 of the Joint Affidavit specifically cited six items. (Copies of these studies were provided to the undersigned, not by plaintiffs or their experts, but by Litton.) For example, in Logue, J. et al. (miscited by plaintiffs as "Logi"), the authors concluded that:

> comparisons of the exposed and control group *failed to demonstrate any significant findings* [and that] . . . the data appear to indicate that there were *no observable long-term health effects which could be ascribed to long-term, low-level exposure to TCE* or other

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Affidavit of Philip Cole, M.D., Dr.P.H. and Sidney Shindell, M.D., LL.B., at para. 3. This further underscores the undersigned's conclusions that these opinions lack the necessary foundation for admissibility established by the Fourth Circuit.

[30] Dr. Rodgers claims to have reached his opinions on causation on the basis of his alleged experience as a physician. He admitted at his deposition, however, that the Poison Control Center he heads has never dealt with chronic TCE exposure and that he himself had never worked on an environmental or occupational case relating to chronic TCE exposure. Rodgers Dep. at 1-82-86. He further admitted that none of his publications or research relate to the alleged effects of chronic exposure to TCE or any other organic solvent. *Id.* at 1-97-98, 1-102, 1-104. Finally, although almost all of the symptoms he suggested were "probably related" to TCE are vague, neurological complaints, Dr. Rodgers admitted that he is not an expert in neurology. *Id.* at 2-30.

> volatile organic compounds. . . . In summary, the present study does not reveal an excess prevalence of any serious chronic health condition among individuals who were exposed to volatile organic compounds.

Logue, J. et al. at 158-60 (emphasis added). Thus, plaintiffs' experts cited this court to a *negative* study as alleged support for their opinions.[31]

As stated above, a prerequisite for submission of an opinion on medical causation is performance of a differential diagnosis in which other potential causes of an alleged complaint are ruled out. Plaintiffs have not taken issue with this requirement. Instead, they purport to comply with it. Again, however, plaintiffs' experts have provided the court only with the blanket assertion that the requirement has been met, without a glimmering of specific reasons for their decisions.

The alleged symptoms upon which the experts attempt to offer positive causation opinions are almost entirely vague, subjective, unverifiable complaints such as headaches, anxiety, arm and leg pains, and fatigue. These are symptoms with thousands of causes in daily life, none of which can be ruled out by plaintiffs' experts. Their assertion that differential diagnoses were performed and alternative explanations ruled out is contrary to the admissions that these experts made in their depositions.

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[31] The other studies are equally unsupportive of plaintiffs' position. For example, Clark, et al., which the Joint Affidavit describes as relating to TCE, has nothing to do with TCE, but *did* involve a variety of other chemicals *not* found in plaintiffs' wells. Both Liu, et al. (Joint Affidavit cites as "Lui"), and Lilis, et al. (Joint Affidavit cites as "Liles"), involve *industrial* exposures to TCE. However, as Litton's experts stress, and as plaintiffs' experts concede, such exposures are frequently accompanied by exposure to a breakdown product of TCE, *i.e.*, dichloroacetylene, which *could not* have been present in plaintiffs' water or homes. Since plaintiffs do not take issue with Litton's analysis, the court must reject any reliance on industrial studies such as Liu, et al. and Lilis, et al.

For example, Dr. Rodgers admitted that most of the plaintiffs' vague neurological complaints could have been caused by anxiety, somatizing disorders, or emotional stress, all of which he regarded as "alternative diagnos[e]s." Causation Mem. at 50. Yet, most of the symptoms he now says are "probably" related to TCE are these very same subjective, unverifiable complaints: headaches, tingling, anxiety, numbness, fatigue, dizziness, lightheadedness, moodiness, forgetfulness, and facial neuralgia. Thus, the purported differential diagnoses performed by plaintiffs' experts cannot stand as valid support for their proposed opinions. They continue to assert that TCE has caused plaintiffs' complaints even when they admit that there are numerous reasonable "alternative diagnoses." Such testimony does not pass muster under Rules 702 and 703. *See In re "Agent Orange" Product Liability Litigation*, 611 F. Supp. at 1250, 1261-63 (expert causation testimony rejected because of failure to rule out other causes of plaintiffs' ailments).

F. Conclusions Concerning Motion on Causation

Ten plaintiffs have not established any evidence of injury or have disavowed that they are seeking recovery for alleged personal injury. Their personal injury claims should, therefore, be dismissed.

With respect to all of the plaintiffs, the proposed testimony of Drs. Broughton, Feldman, and Rodgers is not admissible under Federal Rules of Evidence 702, 703, and 403. Accordingly, plaintiffs cannot show medical causation to a reasonable degree of medical certainty. This failure to establish a *prima facie* case on a key element of their personal injury claims requires that these claims be dismissed.[32]

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[32] Even if the testimony of Drs. Feldman and Rodgers were admitted on the issue of medical causation, that would not necessarily get all plaintiffs past summary judgment, in view of the serious, lingering questions concerning whether plaintiffs' alleged, vague, unverifiable neurological complaints could be considered injuries sufficient to support a cause of action. For

Finally, even if admissible, Dr. Broughton's proposed testimony concerning alleged subclinical injury does not create any genuine issues of material fact sufficient to defeat Litton's motion for summary judgment.

VI. CONCLUSIONS CONCERNING REMAINING TORT CLAIMS

A. Claims Based Upon Alleged Increase Risk of Disease

Plaintiffs seek to recover damages based on their alleged increased risk of contracting disease in the future. In conjunction with this argument, they seek to recover compensation for additional medical monitoring they claim is necessary as a result of their alleged exposures. As set forth below, these claims should be dismissed because the State of North Carolina has not recognized them as valid tort claims. In addition, the undersigned's conclusions concerning lack of admissible evidence of medical causation requires dismissal of these aspects of plaintiffs' claims.

No statute or case in North Carolina creates causes of action based upon claims of increased risk of disease or for medical monitoring costs. Other courts faced with these types of claims have rejected them. See, *e.g.*, *Eagle-Picher Indus., Inc. v. Cox*, 481 So.2d 517, 520 (Fla. App. 1985). The creation of such causes of action implicates policy issues that should be left to the legislature in the first instance. Since there is no basis in North Carolina law to support the type of action that plaintiffs pursue, the undersigned will recommend denial of those claims. *See* Findings of Fact at paras. 221-225 and Conclusions of Law at paras. E.1-E.7.

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example, Dr. Feldman admitted that he could find no clinical neurological problems with certain plaintiffs. *See* Findings of Fact 167-70 (examinations of Rosetta Rogers, Belinda Gaddis, Deborah Chambers, and James Messer all normal). The court need not make a determination on this question at this time in light of the recommendations made herein.

In addition, in jurisdictions in which such claims are recognized, the courts have held that they cannot be maintained in the absence of physical injury caused by exposure to the chemicals at issue. As shown above, plaintiffs' evidence does not create a jury question on either injury-in-fact or medical causation. Accordingly, for this independently sufficient reason, the "increased risk" and "medical monitoring" aspects of their claims must be rejected. *See, e.g., Mink v. University of Chicago*, 460 F. Supp. 713, 719 (N.D. Ill. 1978) ("[t]he mere fact of risk without any accompanying physical injury is insufficient to state a claim . . ."); *Catasauqua Area School District v. Eagle-Picher Indus., Inc.*, No. Civ. Action No. 85-3743 (E.D. Pa., Sep. 23, 1988) (LEXIS, Genfed library, Dist. file) (Attachment 47); Risk Mem. at 5-6, 16-18.

Finally, plaintiffs' claims for alleged increased risk and for costs of medical monitoring fail because plaintiffs cannot show that they are "reasonably certain" to contract any illness in the future. *See, e.g., Short v. Chapman*, 261 N.C. 674, 682, 136 S.E.2d 40 (1964) (evidence must show future injuries with "reasonable certainty" and must be more than "purely speculative or conjectural"); *Callicutt v. Hawkins*, 11 N.C. App. 546, 181 S.E.2d 725 (1971) (same). None of plaintiffs' experts has even offered any such opinion. The only plaintiffs' expert who has attempted to quantify plaintiffs' alleged risk, Dr. Rodgers, believes that, in the worst exposure scenario (*i.e.*, accepting Dr. Spencer's highest alleged concentration of TCE) the plaintiff most at risk has no more than a four in one-thousand increased chance of contracting cancer as a result of her alleged exposure.[33] Far from the "reasonable certainty" needed to establish a claim for increased risk of disease, these figures demonstrate that plaintiffs' alleged increased risk, at worst, is *de minimis*, particularly when compared with the normal background risk of

[33] The alleged increased risks to plaintiffs for which they seek recovery range as low as less than one in ten million. Even these calculated risks depend upon the back-calculation opinions of Dr. Spencer, which, as noted above, must be excluded as inadmissible.

cancer (one in four). Plaintiffs are, therefore, unable to meet their burden under *Celotex*.

B. Claims Based Upon Alleged Emotional Distress

Similarly, the undersigned's conclusions concerning Litton's Motion to Exclude, Motion on Causation, and Motion on Increased Risk require that plaintiffs' claims for damages as a result of alleged emotional distress be dismissed. These claims, as did the others, depend on the back calculations of Dr. Spencer, and exclusion of Dr. Spencer's testimony is equally damaging to the emotional distress claims. Moreover, plaintiffs make an inadequate showing on the prerequisites for maintaining such claims to survive summary judgment.

In so deciding, the undersigned has taken into account the recent decision of the North Carolina Supreme Court in *Johnson v. Ruark Obstetrics and Gynecology Associates, P.A.*, No. 177PA88-Wake (N.C. August 28, 1990), which addressed the showing required to recover on a claim for negligent infliction of emotional distress under North Carolina law. Prior to the *Johnson* decision, the law in North Carolina, as in most other jurisdictions, required that a palintiff seeking to recover for negligent infliction of emotional distress establish, *inter alia*, both a physical injury caused by defendants which accompanied the distress, *see, e.g., Campbell v. Pitt County Memorial Hosp., Inc.*, 84 N.C. App. 314, 352 S.E.2d 902, 909, *aff'd*, 321 N.C. 260, 362 S.E.2d 273 (1987); and some subsequent physical manifestation of the emotional distress, *see e.g., Woodell v. Pinehurst Surgical Clinic, P.A.*, 78 N.C. App. 230, 336 S.E.2d 716, 718 (1985), *aff'd* 316 N.C. 550, 342 S.E.2d 523 (1986).[34]

In *Johnson*, the North Carolina Supreme Court overruled that line of cases, at least in part, and held that, in at least some circumstances, proof of physical injury and subsequent physical

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[34] For all of the reasons discussed in the preceding sections of this memorandum, plaintiffs could not satisfy these requirements.

manifestation would not be required to recover for negligent infliction of emotional distress. *Johnson*, slip op. at 23-24. Although the undersigned has reservations about the appropriateness and applicability of the *Johnson* decision, which involved a claim for parental distress resulting from the stillbirth of a child, to the circumstances of this case, it has assumed for the purposes of these recommendations that the *Johnson* standards govern plaintiffs' emotional distress claims herein. Nevertheless, plaintiffs still cannot meet their burden under *Celotex* for at least two reasons.

First, although the *Johnson* court liberalized the availability of emotional distress claims, it emphasized the importance of one substantial limitation on such claims. Specifically, *Johnson* emphasized that to recover for emotional distress a plaintiff must prove that he or she suffered "severe emotional distress" as a foreseeable result of the defendant's negligent conduct. *Johnson*, slip op. at 28. This the court defined as a "type of severe and disabling emotional or mental condition which may be generally recognized and diagnosed by professionals trained to do so." *Id.* As detailed in the accompanying Recommended Findings of Fact and in the conclusions of law, *infra*, plaintiffs have not made, and apparently cannot make, the requisite showing under *Celotex* on this element of their emotional distress claims. *See* Findings of Fact at paras. 227-228, 230; Conclusions of Law at paras. F3-F7. Dismissal is warranted for that reason alone.

Second, however, where the claimed emotional distress is, as it is in this case, the fear of future disease (primarily cancer), the law requires that plaintiffs prove as well that such fear is objectively reasonable. Irrational beliefs cannot form the basis for recovery for fear of disease. *See, e.g., Broussard v. Olin Corp.*, No. 88-392 (3d Cir. June 28, 1989) (LEXIS, Genfed lib., Dist. file). Plaintiffs have not met their burden of producing sufficient admissible evidence that any fears they experience

(even if they could be said to rise to the level of a serious diagnosable illness) are objectively reasonable. To the contrary, any fears they may have in this case appear to be based upon erroneous beliefs about the supposed dangers arising from their alleged exposures. Plaintiffs' experts cannot say that plaintiffs are likely to contract, or even face a significant chance of contracting, future illness as a result of their alleged exposures, even at the inflated levels calculated by Dr. Spencer and certainly not at the levels actually measured in their wells.[35] Because plaintiffs cannot show that their alleged fears are objectively reasonable, such fears cannot support any recovery.

In conclusion, as a result of their inability to adduce sufficient admissible evidence concerning their alleged doses of TCE, medical causation, and alleged increased risk of disease, plaintiffs have also failed to meet the burden established by Rule 56 and *Celotex* with respect to their claims based upon alleged emotional distress. Accordingly, those claims should be dismissed as well.

C. Claims Based Upon Alleged Nuisance and Trespass

The undersigned's resolution of plaintiffs' other claims requires dismissal of their claims in trespass and nuisance as well. First, an essential element of an action in trespass is a possessory interest in real property. *See State ex rel. Rhodes v. Simpson*, 325 N.C. 514, 385 S.E.2d 329, 332 (N.C. 1989); *Kent v. Humphries*, 303 N.C. 675, 281 S.E.2d 43, 45 (N.C. 1981). *See* Conclusions of Law at para. G.1. Most of the remaining plaintiffs admittedly have no such interest.

[35] Although unnecessary to support this decision, the undersigned notes that some plaintiffs admittedly smoke or chew tobacco in spite of recognized, substantial danger of cancer and other serious health risks. Plaintiffs who use tobacco include James Carroll, Jr., Martha Carroll, Fred Chambers, Walter Randy Gaddis, Kenny Green, Peggy Green, Sandra Hancock, James Messer, and Melanie Messer. *See* Shields Aff., paras. 25, 26, 30, 33, 38, 39, 41, 43, 44 (Attachment 2). This voluntary acceptance of significant risk casts substantial doubt on plaintiffs' claims of fear based on the *de minimis* risks calculated by Dr. Rodgers.

Second, and more importantly, North Carolina does not recognize torts of trespass or nuisance based upon trivial invasions of property. *See, e.g., Twitty v. State*, 85 N.C. App. 42, 354 S.E.2d 296, 302, *review denied*, 320 N.C. 177, 358 S.E.2d 69 (1987). *See* Conclusions of Law at paras. G.4-G.7. In this regard, North Carolina's law is consistent with the well-reasoned views of courts in other jurisdictions. *See, e.g., Bradley v. American Smelting & Refining Co.*, 635 F.1154, 1156 (W.D. Wash. 1986); *Good Fund, Ltd.-1972 v. Church*, 540 F. Supp. 519, 533 (D. Colo. 1982), *rev'd*, 703 F.2d 464 (10th Cir. 1983). *See* Conclusions of Law at paras. G.8-G.9. As the court in *Bradley* aptly held:

> While at common law any trespass entitled a landowner to recover nominal or punitive damages for invasion of his property, such a rule is not appropriate under the circumstances before us. No useful purpose would be served by sanctioning actions in trespass by every landowner within a hundred miles of a manufacturing plant. Manufacturers would be harassed and the litigious few would cause the escalation of costs to the detriment of many .... [T]he plaintiff who cannot show that actual and substantial damages have been suffered should be subject to dismissal of his cause upon a motion for summary judgment.

Bradley v. American Smelting & Refining Co., 635 F. Supp. at 1156. Because plaintiffs have failed, for the reasons set forth above, to offer sufficient admissible evidence to resist summary judgment on their claims of exposure, injury, and causation (including the satellite claims of emotional distress and increased risk), they have done no more than make out a claim for a trivial, *de minimis* encroachment of their interest. This is an inadequate basis, as a matter of law, for their claims for trespass and nuisance.

Moreover, application of these principles to this case well illustrates their wisdom. As unrebutted studies of the United States Environmental Protection Agency submitted by Litton document, the chemicals found in plaintiffs' wells are not unique to Litton.[36] Rather, they are ubiquitous in the environment, occurring in the air, in foodstuffs and in household products in concentrations as great and even greater than those in which they have been measured in plaintiffs' wells. For example, the Health Advisories put out by the United States Environmental Protection Agency's Office of Drinking Water report the following:

> *Trichloroethylene* – Production of TCE was 200 million lbs in 1982. . . . [T]he majority of all TCE production is released to the environment. . . . Because metal working operations are performed nationwide, TCE releases occur in all industrialized areas. . . . Because of the large and dispersed releases, TCE occurs widely in the environment. Trichloroethylene is ubiquitous in the air with levels in the ppt to ppb range. . . . Trichloroethylene has been reported to occur in some foods in the ppm range.

Health Advisory for TCE (at 3). This report offers similar observations concerning the other chemicals in issue in this case. Common daily exposures to these compounds are thus comparable to exposures that plaintiffs incurred in this case. *See* Findings of Fact at paras. 237-39.

As the technology for detecting microscopic particles has advanced to the level of parts per billion--indeed, parts per trillion or parts per quadrillion--it is possible to demonstrate that

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[36] For example, a 1987 study by the United States Environmental Protection Agency found that many commonly used household products contain the chemicals at issue in this lawsuit. *See* Office of Pesticides and Toxic Substances, United States Environmental Protection Agency, "Household Solvent Products: A 'Shelf' Survey with Laboratory Analysis" at x-xii, 4-1-29 (1987) (Attachment 42).

human activities of all kinds have objective, measurable impacts on nearby individuals. Yet, the law cannot sanction all such impacts; rather, its reach must be limited to instances where real, substantial harm is alleged and shown. As the North Carolina Supreme Court noted in a case cited by plaintiffs:

> [The law] does not recognize every business or use of property as a nuisance that imparts a degree of impurity to the air, for if such were the case, farms could not be built, nor life in compact communities tolerated and even the ordinary uses of property would be seriously interfered with .... The law only deals with real, substantial injuries . . . and will not lend its aid . . . simply because his neighbor is annoyed, or even damaged thereby, unless the use complained of is both in violation of that neighbor's right and unreasonable .... [W]hen the matters complained of are such as are common and usual, and no unreasonable and unnecessary injuries are inflicted, the law does not interfere.

Holton v. North Western Oil Co., 201 N.C. 744, 161 S.E. 391, 393 (N.C. 1931).

Given the lack of sufficient admissible evidence on exposure, injury, and causation, the concentration of chemicals found in plaintiffs' wells cannot be distinguished from zero for all practical purposes. In these circumstances, where there has been, at worst, a *de minimis* encroachment on plaintiffs' property, and where the same chemicals are ubiquitous in the environment at comparable concentrations, plaintiffs' claims for nuisance and trespass must also fail. Accordingly, their action for alleged property damages should be dismissed. *See* Conclusions of Law at paras. G.1-G.12.

VII. ANALYSIS OF REGULATORY CLAIMS

Plaintiffs' claims under CERCLA and their citizen suit under RCRA must be considered in the context in which they were brought, *i.e.*, as adjuncts to what is essentially a private tort action. In this regard, the CERCLA and RCRA claims must be considered in light of plaintiffs' failure to adduce admissible evidence of any particular exposure to hazardous substances or hazardous wastes, their failure to demonstrate a *prima facie* case of medical causation or to demonstrate any cognizable risk of increased risk of disease in the future, their failure to demonstrate a *prima facie* case for entitlement to damages for alleged emotional distress, and their failure to demonstrate more than a *de minimis* interference with their alleged property interests, such that their claims sounding in trespass and nuisance must be dismissed. As this Memorandum and Recommendation demonstrates, plaintiffs filed the instant action without adequate investigation, misrepresented the status of this case to the undersigned, and, ultimately have failed to present sufficient evidence to allow any of their common law claims to proceed. Although plaintiffs' CERCLA and RCRA claims must be addressed on their own merits, if any, the court must assure that CERCLA and RCRA are not misemployed to provide plaintiffs what they clearly are not entitled to under the other claims they have presented.

A. Conclusions on CERCLA

Plaintiffs attempt to use CERCLA as a surrogate for their common law tort suit. This contradicts the legislative history of CERCLA, the statutory language, and a wealth of case law written since CERCLA's inception. As the court said in *Artesian Water Co. v. Government of New Castle County*, 659 F. Supp. 1269, 1299-300 (D. Del. 1987), *aff'd*, 851 F.2d 643 (3d Cir. 1988),

> Congress did not intend for CERCLA, a narrowly drawn federal remedy, to make injured parties whole or to be a general vehicle for toxic tort actions.

Rather, the section allows only for recovery of "response costs" actually incurred in cleaning up a hazardous waste site. *Adams v. Republic Steel Corp.*, 621 F. Supp. 370, 376 (W.D. Tenn. 1985). *See* Conclusions of Law at para. H.4.

The claims here clearly fall outside the scope of "response costs" that can be recovered in a CERCLA cost recovery action. Thus, plaintiffs' claims for alleged costs of medical testing and surveillance, property damage and other economic costs, and attorneys' fees are not cognizable under CERCLA. *See* Conclusions of Law at paras. H.12-H.13, H.15-H.16. Similarly, plaintiffs cannot recover their alleged sampling and analytical costs or their alleged costs of alternative water supplies because plaintiffs are not engaged in a cleanup of a site and, in any event, have failed to offer any affirmative evidence of compliance with the National Contingency Plan established pursuant to CERCLA. *See id.* at paras. H.13-H.14. On these issues, plaintiffs indisputably bear the burden of proof (*see id.* at para. H.6), and their failure to address such evidence is fatal under *Celotex*.

In addition, the undersigned has concluded above that, as a result of its recommended decisions on the Motion to Exclude, Motion on Causation, and Motion on Increased Risk, plaintiffs cannot show that they are entitled to recover, as a factual matter, damages for medical monitoring. The same reasoning precludes any award of such damages under CERCLA, even if CERCLA were construed in some manner to allow for recovery of such damages, because plaintiffs are unable to show that any such monitoring is reasonably necessary or consistent with the NCP. *See* Conclusions of Law at para. H.2. In short, plaintiffs' CERCLA claims must be dismissed.

B. Conclusions on RCRA

Plaintiffs have also attempted to assert a claim under the citizen suit provisions of Section 7002(a) of RCRA, 42, United States Code, Section 6972(a). Although plaintiffs have been extremely vague about what relief they hope to obtain under RCRA, it appears to the undersigned that they seek (1) for the court to impose some type of unspecified injunction against Litton to remediate the alleged chemical migration and (2) imposition of civil penalties in the amount of $25,000 per day.

If the court had jurisdiction over the RCRA claim, it would clearly have no factual basis upon which to grant the first type of relief requested, *i.e.*, imposition of an injunction against Litton. As shown above, plaintiffs have failed to adduce sufficient evidence of anything more than a *de minimis* encroachment of chemicals upon their property. There is no admissible evidence that such alleged encroachment caused harm or could cause harm. Moreover, Litton is already conducting remedial actions under its consent order with the United States Environmental Protection Agnecy. *See* Findings of Fact at para. 108. Accordingly, even if there were jurisdiction, at least half of the RCRA claim would fail as a result of the failures in plaintiffs' case outlined above.

In any event, however, plaintiffs' ability to maintain any action under RCRA depends upon their satisfaction of the jurisdictional prerequisites set forth in Section 7002(b) of RCRA, 42, United States Code, Section 6972(b). *See* Conclusions of Law at para. I.1. Plaintiffs have failed each of the three jurisdictional hurdles.

First, plaintiffs did not provide Litton with adequate prior notice of the RCRA suit. Among other reasons, the purported notice letter issued on October 21, 1988, failed to indicate the specific RCRA provisions that Litton allegedly violated or the dates of such violations. *See id.* at paras. I.2-I.5. Second,

jurisdiction does not exist because Litton is already undertaking remedial activities at its plant, under the supervision of the United States Environmental Protection Agency, pursuant to a judicially enforceable RCRA consent order. *See McGregor v. Indus. Excess Landfill, Inc.*, 709 F. Supp. 1401, 1407 (N.D. Ohio 1987), *aff'd*, 856 F.2d 39 (6th Cir. 1988); *O'Leary v. Moyer's Landfill, Inc.*, 677 F. Supp. 807, 819 (E.D. Pa. 1988); Conclusions of Law at paras. I.6-I.9. Third, the RCRA suit is barred because plaintiffs have not alleged or demonstrated any continuing violation of the statute. Rather, they allege violations that took place, if at all, wholly in the past. The citizen suit provisions therefore do not apply. *See* Conclusions of Law at paras. I.10-I-13.

Finally, even if there were otherwise jurisdiction, the undersigned believes the RCRA count should be dismissed under the primary jurisdiction doctrine. The technical issues involved with the cleanup of the Litton site are entirely within EPA's area of expertise. *See id.* at paras. I.14-I.15.

Summary

As shown above, and as supported in more detail in the undersigned's Findings of Fact, Part I, and Conclusions of Law, Part II, which are incorporated herein by reference, plaintiffs have failed to establish any admissible evidence on the critical issues already identified by this court: exposure, injury, and medical causation. Without such evidence, their claims for personal injury, increased risk, emotional distress, nuisance, and trespass fail. In addition, plaintiffs have not met the requirements for pursuing actions under either CERCLA or RCRA. Accordingly, the time is now ripe for the court to dismiss this entire case with prejudice.

RECOMMENDATIONS

IT IS, THEREFORE, RESPECTFULLY RECOMMENDED, based on the findings of fact and conclusions of law entered simultaneously herewith and incorporated herein by reference, and for the reasons above stated, that:

A. Litton's Motion to Exclude be granted with respect to Mr. Moore's proposed testimony concerning when chemicals from the plant allegedly first arrived at plaintiffs' wells because such testimony would not be of "assistance to the trier of fact" and is not sufficiently grounded in fact to comport with the requirements of Federal Rules of Evidence 702-03 and, independently, because the undue prejudicial impact of such testimony would outweigh any probative value under Federal Rule of Evidence 403;

B. Litton's Motion to Exclude be granted with respect to Dr. Spencer's proposed testimony concerning the level of chemicals allegedly present in plaintiffs' water prior to 1987, for each of the following, independently sufficient, reasons:

1. Dr. Spencer cannot be considered an expert with respect to the issues raised by his proposed testimony;

2. Dr. Spencer's purported methodology is not "demonstrably objective" within the meaning of the Fourth Circuit's decision in *United States v. Baller, supra*;

3. Dr. Spencer's opinions are too speculative to be of assistance to a jury

pursuant to Federal Rule of Evidence 702;

4. Dr. Spencer's opinions are not adequately grounded in facts pursuant to Federal Rule of Evidence 703;

5. Dr. Spencer's opinions must be excluded because they rely upon Mr. Moore's excluded opinions concerning when chemicals from the plant first allegedly arrived at plaintiffs' wells; and

6. to the extent that Dr. Spencer's opinions would have any probative value, such value would be greatly outweighed by the risk of undue prejudicial effect pursuant to Federal Rule of Evidence 403;

C. Plaintiffs' personal injury claims be dismissed for the following, independently sufficient, reasons:

1. in light of the proposed exclusion of the testimony of Mr. Moore and Dr. Spencer, plaintiffs have not adduced sufficient admissible evidence of migration of chemicals to their wells and ingestion of chemicals;

2. in light of the proposed exclusion of the testimony of Mr. Moore and Dr. Spencer, plaintiffs' medical causation experts are unprepared and unable to provide evidence, to a reasonable degree of medical certainty, that any plaintiff's alleged ail-

ment was caused by the alleged exposure to the chemicals at issue;

3. even if the noted testimony of Mr. Moore and Dr. Spencer were not excluded, plaintiffs are unable to adduce sufficient admissible testimony concerning medical causation;

4. the claims of Jennifer Simonds, Justin Gaddis, Derrick Gaddis, Jonathan Messer, and Chuck Hancock should be dismissed because of their failure to adduce any expert medical testimony concerning the existence of any physical injury;

5. the claims of Sandra Hancock and Melanie Messer should be dismissed because of their failure to adduce any expert medical testimony concerning medical causation; and

6. the claims of James "Kenny" Green and Marvin Garrett should be dismissed because they have disclaimed an intention of seeking any recovery for alleged physical injuries;

D. Plaintiffs' claims for alleged increased risk of disease be dismissed for the following, independently sufficient, reasons:

1. North Carolina law does not recognize such claims;

2. if such claims were recognized under North Carolina law, they could not be sustained in this case because of the lack of evidence that plaintiffs have

suffered physical injury as a result of their alleged exposure to the chemicals at issue; and

3. if such claims were recognized under North Carolina law, they could not be sustained in this case because of the lack of evidence that plaintiffs are "reasonably certain" to contract any alleged disease in the future;

E. Plaintiffs' claims for alleged costs of future medical monitoring be dismissed for the following, independently sufficient, reasons:

1. North Carolina law does not recognize such claims;

2. if such claims were recognized under North Carolina law, they could not be sustained in this case because of the lack of evidence that plaintiffs have suffered physical injury as a result of their alleged exposure to the chemicals at issue;

3. if such claims were recognized under North Carolina law, they could not be sustained in this case because of the lack of evidence that plaintiffs are "reasonably certain" to contract any alleged disease in the future as a result of their exposure to the chemicals at issue in this case; and

4. plaintiffs have not adduced sufficient evidence to create a genuine issue of material fact, sufficient to withstand

summary judgment, that any additional medical monitoring is necessary or reasonable;

F. Plaintiffs' claims for emotional distress damages be dismissed for the following, independently sufficient, reasons:

1. plaintiffs cannot show that they suffer from a recognized, diagnosed severe and disabling emotional or mental disorder; and

2. plaintiffs cannot show that their alleged fears are objectively reasonable;

G. Plaintiffs' claims based on nuisance and trespass theories, and for alleged property damage, be dismissed for the following, independently sufficient, reasons:

1. plaintiffs cannot show that they suffered physical injury as a result of their alleged exposure to the chemicals at issue;

2. plaintiffs cannot show any cognizable risk of future injury as a result of their alleged exposure to the chemicals at issue;

3. plaintiffs cannot show that the alleged presence of the chemicals at issue on their property is anything more than *de minimis*; and

4. the trespass claims of James Carroll, Jr., Phyllis Ann Carroll, Rusty Chambers, Derrick Gaddis, Justin

Gaddis, Keith S. Gentle, James Messer, Charles Hancock, Jr., Sandra Hancock, Jonathan Messer, Melanie Messer, Edwina Rogers, Ancy Wimpey, and Jennifer (Simonds) Wimpey should be dismissed because they admittedly do not have any possessory interests in the properties in issue;

H. The CERCLA claims be dismissed for the following, independently sufficient, reasons:

1. plaintiffs' failure to present admissible evidence of the extent of their alleged exposure to the chemicals at issue, medical causation, and alleged increased risk of disease precludes any action they might have otherwise had under CERCLA for their alleged costs of medical monitoring costs and alternative water supplies;

2. medical monitoring costs, property damage costs, loss of income, and attorneys' fees are not cognizable in private recovery actions under Section 107 of CERCLA;

3. groundwater monitoring costs are not cognizable under CERCLA where, as here, plaintiffs have not attempted, and do not intend, to clean up hazardous substances; and

4. plaintiffs have offered no evidence of compliance with or consistency with the National Contingency Plan;

I. Plaintiffs' RCRA claims be dismissed for the following, independent sufficient, reasons:

1. the court lacks jurisdiction because plaintiffs failed to give sufficient prior notice of their RCRA claims;

2. the court lacks jurisdiction because Litton is remediating the plant pursuant to a Consent Order that is enforceable, at EPA's option, in federal court;

3. the court lacks jurisdiction, because plaintiffs have not sufficiently alleged, nor shown evidence of, any continuing RCRA violations; and

4. the court should decline jurisdiction under the doctrine of primary jurisdiction;

J. The motion of plaintiffs Sandra Hancock and Chuck Hancock for voluntary dismissal be denied, for the reasons previously set forth by the undersigned upon plaintiffs' motions for voluntary dismissal and by the district court upon consideration of plaintiffs' objections to the undersigned's recommended denials of such motions; and

K. In order to serve the ends of justice, that the district court conduct an inquiry pursuant to Rule 11, Federal Rules of Civil Procedure.

The parties are hereby advised that, pursuant to 28, United States Code, Section 636(b)(1)(C), written objections to the memorandum and recommendations contained herein and the findings of fact and conclusions of law set forth in separate documents entered simultaneously herewith and incorporated by reference, must be filed within ten (10) days of service of same. Failure to file such objections with the district court will preclude the parties from raising such objections on appeal. *Thomas v. Arn*, 474 U.S. 140 (1985), *reh'g denied*, 474 U.S. 1111 (1986); *United States v. Schronce*, 727 F.2d 91 (4th Cir.), *cert. denied*, 467 U.S. 1208 (1984).

This Memorandum and Recommendation, and the Recommended Findings of Fact, Part I, and Conclusions of Law, Part II, incorporated herein by reference, are entered in response to the motions pending presently before this court, as set forth above.

Respectfully submitted, this, the 29th day of October, 1990.

/s/ J. Toliver Davis
J. TOLIVER DAVIS
UNITED STATES
MAGISTRATE

STATEMENT OF INTERNAL OPERATING PROCEDURES

UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

* * *

36.4. Publications of decisions. Opinions delivered by the Court will be published only if the opinion satisfies one or more of the standards for publication:

i. It establishes, alters, modifies, clarifies, or explains a rule of law within this Circuit; or

ii. It involves a legal issue of continuing public interest; or

iii. It criticizes existing law; or

iv. It contains an historical review of a legal rule that is not duplicative; or

v. It resolves a conflict between panels of this Court, or creates a conflict with a decision in another circuit.

The court will publish opinions only in cases that have been fully briefed and presented at oral argument. Opinions in such cases will be published if the author or a majority of the joining judges believe the opinion satisfies one or more of the standards for publication, and all members of the court have acknowledged in writing their receipt of the proposed opinion. A judge may file a published opinion without obtaining all acknowledgments only if the opinion has been in circulation for ten days.

36.5. Unpublished dispositions. Unpublished opinions give counsel, the parties and the lower court or agency a statement of the reasons for the decision. They may not recite all of the facts or background of the case and may simply adopt the reasoning of the lower court. They are sent only to the trial court or agency in which the case originated, to counsel for all parties

in the case, and to litigants in the case not represented by counsel. Any individual or institution may receive copies of all published opinions of the Court by paying an annual subscription fee for this service. In addition, copies of all published opinions are sent to all circuit judges, district judges, bankruptcy judges, magistrate judges, clerks of district court, United States Attorneys and Federal Defenders upon request. All published and unpublished opinions are available on EDOS, the Court's Electronic Bulletin Board System, for thirty days after issuance. The Federal Reporter periodically lists the result in all cases involving unpublished opinions. Copies of any unpublished opinion are retained in the Clerk's Office and a copy may be obtained from the Clerk's Office for $2.00.

Counsel may move for publication of an unpublished opinion, citing reasons. If such motion is granted, the unpublished opinion will be published without change in result. [Amended 1-1-94.]

36.6. Citation of unpublished dispositions. In the absence of unusual circumstances, this Court will not cite an unpublished disposition in any of its published opinions or unpublished dispositions. Citation of this Court's unpublished dispositions in briefs and oral arguments in this Court and in the district courts within this Circuit is disfavored, except for the purpose of establishing res judicata, estoppel, or the law of the case.

If counsel believes, nevertheless, that an unpublished disposition of any court has precedential value in relation to a material issue in a case and that there is no published opinion that would serve as well, such disposition may be cited if counsel serves a copy thereof on all other parties in the case and on the Court. Such service may be accomplished by including a copy of the disposition in an attachment or addendum to the brief pursuant to the procedures set forth in Local Rule 28(b).

FEDERAL RULE OF EVIDENCE 104(a) and (b):

(a) Questions of admissibility generally. Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.

(b) Relevancy conditioned on fact. When the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.

* * *

FEDERAL RULE OF EVIDENCE 702:

Testimony by Experts If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

UNITED STATES CONSTITUTION, FIFTH AMENDMENT:

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy

of life and limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

FEDERAL RULE OF CIVIL PROCEDURE 56(b), (c), and (e):

* * *

(b) For Defending Party. A party against whom a claim, counterclaim, or cross-claim is asserted or a declaratory judgment is sought may, at any time, move with or without supporting affidavits for a summary judgment in the party's favor as to all or any part thereof.

(c) Motion and Proceedings Thereon. The motion shall be served at least 10 days before the time fixed for the hearing. The adverse party prior to the day of hearing may serve opposing affidavits. The judgment sought shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law. A summary judgment, interlocutory in character, may be rendered on the issue of liability alone although there is a genuine issue as to the amount of damages.

* * *

(e) Form of Affidavits; Further Testimony; Defense Required. Supporting and opposing affidavits shall be made on personal knowledge, shall set forth such facts as would be admissible

in evidence, and shall show affirmatively that the affiant is competent to testify to the matters stated therein. Sworn or certified copies of all papers or parts thereof referred to in an affidavit shall be attached thereto or served therewith. The court may permit affidavits to be supplemented or opposed by depositions, answers to interrogatories, or further affidavits. When a motion for summary judgment is made and supported as provided in this rule, an adverse party may not rest upon the mere allegations or denials of the adverse party's pleading, but the adverse party's response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue for trial. If the adverse party does not so respond, summary judgment, if appropriate, shall be entered against the adverse party.